FACTO ET SAPIENTIA

Medicine
K

KING'S COLLEGE HOSPITAL REPORTS;

BEING

THE ANNUAL REPORT OF KING'S COLLEGE HOSPITAL

AND THE

MEDICAL DEPARTMENT OF KING'S COLLEGE.

EDITED BY

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PREFACE.

In preparing the first volume of the Reports of King's College Hospital and its Medical School the Editors have endeavoured to include not only a record of interesting cases, and of some branches of scientific work performed in the Hospital and in the College, but also to give an indication of what has been done and is being done by former students, who are carrying the traditions of their school into other hospitals in town and country, who are engaged by the various examining bodies in maintaining the standard of professional skill, and who in other ways are advancing medical knowledge and reflecting credit upon King's College.

It is always difficult to start a new venture; the Editors therefore hope that their efforts will be received with sympathetic indulgence, and they appeal to friends to facilitate their labours in future years by kindly indicating errors or omissions. It is hoped that the effort here made to furnish indications of the past growth of the College and Hospital, and of the present work carried out there, will encourage friends to look hopefully on the future prospects of the school, which so largely depend upon the interest therein felt by former students.

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KING'S COLLEGE AND KING'S COLLEGE HOSPITAL.

A HISTORICAL SKETCH.

By JOHN CURNOW, M.D., F.R.C.P.,
DEAN OF THE FACULTY OF MEDICINE.

PART I.

It is only fitting that the first volume of reports of the work now being done at King's College and King's College Hospital, should begin with a historical sketch of their foundation, however imperfect it may be.

I am aware how difficult a task this is, for most of the founders have already passed away, and but few of the earlier students still remain among us. I can only plead my attachment to the college and hospital wherein I obtained my medical education, and in which a large portion of my after daily life has been spent, as an excuse for my endeavouring to reproduce some of the characteristic points in the past history and in the present working of the medical school of the College and the Hospital.

The purposes for which King's College was established were thus stated in the copy of the advertisement issued at the preliminary meeting for the foundation of the future institution:

"King's College, London.—At a meeting of the friends of this institution, holden at the Freemasons' Tavern on Saturday, the 21st of June, 1828, His Grace the Duke of Wellington in the chair, it was unanimously resolved—

"1. That it is the opinion of this meeting that a college for general education be founded in the metropolis, in which, while the various branches of literature and science are made the subjects of instruction, it shall be an essential part of the system to imbue the minds of youths with a knowledge of the doctrines and duties of Christianity, as inculcated by the United Church of England and Ireland.

"2. That the King having been graciously pleased to signify his approbation of the establishment of the college, His Majesty be most respectfully requested to take it under his royal patronage, and permit it to be entitled 'King's College, London.'"

These principles and the constitution of the future college were clearly and explicitly embodied in the royal charter which was granted by letters patent from King George IV on August 14th, 1829, on the petition of the Archbishop of Canterbury, the Duke of Rutland, and the Bishop of London. This petition stated that they, "together with divers other loving subjects, had agreed to found a college for the general education of youth, either in the cities of London or Westminster, or somewhere in the immediate neighbourhood thereof, in which college the various branches of literature and science are intended to be taught, and also the doctrines and duties of Christianity, as the same are inculcated by the United Church of England and Ireland."

The royal charter was granted in the following terms:— "Now know ye, that we, being desirous of maintaining indissolubly the connection between sound religion and useful learning, and highly approving the design of instituting a college in which instruction in the doctrines and duties of Christianity, as taught by the United Church of England and Ireland, shall be for ever combined with other branches of useful education, and for the better carrying on of the same, have by virtue of our prerogative royal, and of our especial grace, certain knowledge, and mere motion, granted, constituted, and declared, and by these presents, for us, our heirs and successors, do grant, constitute, and declare," &c.

King's College was thus established for the teaching of the various branches of literature and science together with the doctrines and duties inculcated by the United Church of England and Ireland, and its constitution was also specifically laid down. It was to consist of a visitor, governors, members of council, a principal or other head, professors and tutors, or other masters or instructors. The visitor appointed is the Archbishop of Canterbury for the time being. The perpetual governors appointed by the Crown under the charter are the Lord High Chancellor, or Lord Keeper of our Great Seal, the Archbishop of York, the Bishop of London, the Chief Justice of England, the Speaker of the House of Commons, the Secretary of State for the Home Department, the Lord Mayor of London, the Dean of St. Paul's Cathedral, and the Dean of Westminster. The elected governors were first chosen from among the original founders of the College, and are now nominated by the visitor from the members of the Council. They hold office during life unless they choose to resign. They are eight in number, of whom one half must be laymen. In addition to the visitor, official governors, life governors, and treasurer, there are also members of council, who were originally selected from the proprietors and donors, and their places were filled afterwards by co-option; but by the amended charter of 1882 the power of electing members of council has been transferred to the Annual Court. Of the twenty-four members elected to the Council, six members who have been longest in office retire annually, but are eligible for re-election.

The Council, thus composed of the Governors and the Treasurer and the elected members, directs and manages all the affairs of the College, and appoints the Principal, Treasurer, and Head Master, and all the professors, tutors, masters, and instructors, and the Secretary and all officers, agents, and servants except the Auditors, and may also remove all such persons from time to time as it thinks fit. It has, therefore, an absolute responsibility for the work and management of the whole College, except that no appointment or removal of a Principal or Head Master can take place without the consent of the Governors. The Annual Court consists of the "Fellows" who in 1882 became members of the corporation, and of persons who have, by virtue of donations of not less than £25, become members of the College. The Fellows are chosen either from eminent former students (not to exceed three in any year), or from those "who have been Principal or Head Master, or for not less than five years a professor or a lecturer or assistant master or secretary of the College, or have served the College in a conspicuous manner." Such is the constitution of King's College as laid down by the original charter of incorporation of 1829, and the amended charter of 1882. The only important modification, therefore, in the constitution of the College since its foundation is that the Fellows, as well as the other members of the College, have a voice in the election of the Council. This voice might now be considerable, if not preponderant, but the Fellows have taken no adequate steps to assert their new privileges.

In 1870, Departmental Boards, consisting of the professors with a Dean elected by the professors as the executive officer, and in the absence of the Principal to act as chairman, were formed to carry out the routine work in the several departments; and a General Board to consider inter-departmental and general questions was also then constituted. This is composed of the Deans and an elected delegate from each department. In the same year those members of the medical staff of the Hospital who were not professors in the College were added to the Medical Board, but provisoes were passed as to their powers of voting on questions of fees. The Principal is by virtue of his office chairman of all Boards. The formation of these Boards has, however, in no way altered the original constitution of the College, for they have no power but that of making recommendations to the Council, and in the Medical Department the Board only takes the place of a former weekly committee and the general meetings of the professors. There is this special proviso in the original charter, and it is reproduced in the later one :—"Provided always, that no person who is not a member of the United Church of England and Ireland, as by law established, shall be competent to act as Governor by virtue of his office, or be nominated or act as Life Governor, or be eligible as a member of the Council, or to fill any office in the College, except only the professorships of Oriental literature and modern languages."

The reasons for the stringency of this religious restriction are easily explained when we remember the educational history of the period when King's College was founded. The creation of King's College was coeval with the great changes which were taking place in the early years of this century. Scientific progress, mechanical invention, manufacturing and industrial developments, were making vast strides in every direction, and side by side political and legislative changes gave a new impetus to the life of the nation.

The great Reform Act was passed in 1830, and the tendency to change, enlargement, and reform was felt in educational as well as in political and scientific spheres. The two ancient Universities of Oxford and Cambridge were practically inaccessible to the middle classes of London and the country in general, because of their distance and their expense; and this, with a strong desire which arose to enlarge the scope of educational study in a scientific and even technical direction, led to a vigorous effort being set on foot to secure a London University.

The revolt against the predominance of classics and literature was united with a jealousy of the influence of the Church as representing religion in education; and in 1826, in great measure owing to the advocacy of the poet Campbell, and more especially to the zeal and earnestness of Mr. Brougham and his political friends, a scheme for the formation of a London University was launched. In 1825 the first steps were taken, and in 1827 so successful had been the movement that the foundation stone of a new building in Gower Street, as a University for London, was laid by the Duke of Sussex. Professors were appointed and classes opened in the following year in the Faculties of Arts, Law, and Medicine. Some of the founders of the so-called "London University" expressly disavowed any intention of asking for powers to grant degrees, but as soon as the new institution had a local standing and a name, efforts were made to change it from a private association, and to obtain for it from the Crown a charter of incorporation as a University, with power to grant degrees. But these efforts were long unsuccessful. It was expressly stipulated that no student at this institution should be called upon to subscribe any form of religious test, or be excluded on the grounds of theological belief. Hence the awakening of the members of the Church of England towards the foundation of a University College which should insist on religious instruction in accordance with the principles of the Church of England and Ireland, as well as give a general and technical education in arts, laws, and medicine. "London University" in Gower Street never had a charter, but in 1836, nine years after the charter had been given to King's College, one was granted to the London University College in Gower Street, incorporating it for the purpose of "affording, at a moderate expense, the means of education in literature, science, and the fine arts, and in the knowledge requisite for the learned professions." This charter was granted to University College by King William IV in November, 1836.

On the same day another was granted to a new body called the "University of London," which was to act as a Board of Examiners and to confer degrees. This arrangement was obviously a mere compromise to allay the jealousies that arose from the conflicting interests of the two Colleges; and although the University has justified its creation so far as being an absolutely impartial body for examination purposes, and one which has fulfilled its statutory duties most thoroughly and ably, it has unfortunately been thrust into the position which should have only been occupied by a "Teaching University for London." The new body which was thus formed had no special relation to King's College, or to University College, as it was now called, but was to hold an even-handed scale between them. The original charter of this new University empowered the Senate to receive, as candidates for degrees, students of University and King's Colleges and other affiliated institutions, but these were never contemplated as competing institutions, or even thought of as being of the same rank, by the original promoters of the two Colleges. They included Nonconformist colleges in London and the provinces; Roman Catholic seminaries in England and in Ireland; the Queen's Colleges in Birmingham and

Liverpool, and afterwards Owens College, Manchester; Wesleyan Colleges at Taunton and Sheffield, and other even less important colleges and schools.

In 1839 the recognised medical schools were affiliated to the new University, and in 1840 many of the non-medical institutions; but most of the latter were obviously of a lower grade than the two Colleges and of different educational worth among themselves; and thus from its very establishment all idea of a security for academical teaching was destroyed, as well as the fundamental notion of the early founders that a real local university ought and should be created in and for London. Ten years after the foundation of the University, Brougham persuaded University College to give certificates of studentship to those who had attended its evening classes (a procedure speedily followed by other institutions), and the Senate of the University had not sufficient courage to refuse these certificates, although they were obviously opposed to all the principles of its founders. Such certificates being valueless as proper evidences of attendance at a place of study, all certificates of attendance in Arts and Laws were dispensed with, in 1858, by the introduction of a clause into a new charter; and since this date the University of London has become an "Imperial Examining Board;" having no special reference to collegiate training, and so has departed from even its first semblance of being a university; for a body which aspires to this name must have some real working connection with the methods of higher education, as well as perform the duties of mere examination and certification.

I must, however, point out that the University has not been logical in requiring no evidence of study, for in Medicine regular attendance and clinical practice at some recognised institution has always been insisted on. But this may be explained by the knowledge that an examinational test alone in this branch of study would never have been acceptable to the community, and in recent times the General Medical Council has laid down peremptory regulations as to medical education, which every licensing body must obey. The revived movement for a Teaching University in London, in which education should be considered as well as mere examination results, is absolutely justified by the history of the existing University.

From the very beginning the plan of the future King's College was laid down on a large scale, and £200,000 at least has been spent on the building and establishment; but a debt has impeded its progress from its foundation, for in 1829 many of the extreme Protestant party, distrusting the politics of the Duke of Wellington, seceded from the movement, and withdrew without paying their promised contributions. The supporters of the College were divided according to their contributions into proprietors and donors, and the former had a right to nominate pupils at a slightly reduced fee. It was opened on October 8th, 1831, and the following distinguished professors and teachers had taken office in the new institution. Mathematics was entrusted to Rev. T. G. Hall, M.A.; Classical Literature to J. Anstice, B.A.; Natural and Experimental Philosophy to Rev. H. Moseley, M.A.; Natural History to J. Rennie, M.A.; Political Economy to N. W. Senior, M.A.; Jurisprudence to John J. Park, LL.D.; Geology to Charles Lyell, F.G.S.; Botany to G. T. Burnett, F.L.S.; Chemistry to J. F. Daniell, F.R.S.; Surgery to J. H. Green, F.R.S.; Anatomy to Herbert Mayo, F.R.S.; Theory of Physic, afterwards called Materia Medica and Therapeutics, to B. Hawkins,* M.D.; Practice of Physic to F. Hawkins, M.D.; Midwifery to R. Ferguson, M.D.; Practical Anatomy to R. Partridge; French to L. T. Ventouillac; German to A. Bernays, Ph.D.; Italian to G. Rossetti, LL.D.; Spanish to P. de Mendibil. In the Junior Department, afterwards the School, the Rev. J. R. Major was appointed Head Master, and the Rev. Joseph Edwards Second Master. The first Principal was the Rev. William Otter, M.A., afterwards Bishop of Chichester, and the first Secretary was Henry Nelson Coleridge, but he was almost immediately succeeded by Henry William Smith. The College, having been thus established, was immediately separated into distinct departments—(1) General Literature and Science; (2) Medical; and (3) the Junior Department, or School. The importance of the Medical Department (although not specifically mentioned at the preliminary meeting), and the part that it was to play in the carrying out of their ideas and designs, were clearly appreciated by the founders, and are shown in the address of the Council on the opening of the College in 1831. "In establishing a School of Medicine and Surgery in King's College, the Council have been influenced by the belief that many individuals who intend their sons for the medical profession will gladly embrace an opportunity of placing them in connection with an institution which has for its principal object to educate the rising generation in the doctrines of Christianity as taught by the Established Church, and to fix in their minds the true principles of morality. They believe, likewise, that every one who has the welfare of society at heart, and who has considered the most effectual means of promoting it, will feel an especial interest in the success of this part of their undertaking, under the conviction that the duties which devolve upon the medical profession are such as to render the religious and moral character of its members not less important than their practical and scientific attainments. The Council trust that all who belong to the class of *matriculated* students in Medicine in King's College will be regular in their attendance at Divine worship in the College chapel, and they hope (and experience justifies the expectation) that the students may be able to avail themselves of the opportunities of religious instruction offered by the lectures of the Principal. The Council earnestly recommend that those who have it in their power should devote themselves for some time to the general studies of the College before they enter upon that course of instruction which is more exclusively professional." The connection with the Established Church has lately been re-affirmed by the Council, who, by a majority of fifteen to eight, on the 26th of October, 1894, came to a conclusion that they would rather forego their share of the Government grant to University Colleges (£1700 per annum) than relax the religious qualification required by the Charter. A virtual conscience clause has always been in existence, and students of almost all religions and sects have been pupils at the College.

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* Dr. Bissett Hawkins has died, æt. 98, whilst this article has been passing through the press (December, 1894).

The founders of King's College have also a right to claim the first attempt to give a collegiate education to the medical students of London, for within the same walls the student could find not only the proper opportunities for cultivating medical knowledge, but the means of acquiring those literary and scientific attainments which form the surest and best foundation for the theory and practice of our profession. In 1836, rooms were fitted up for the reception of resident students who desired the privacy of a college life; and in 1845, rooms adjacent to the College were taken, in which those who did not care to reside within the College could live or take their meals under the supervision of a medical tutor. These were practically the first attempts at homes in London for medical students, whether residential or non-residential. Thus, whilst the medical student was preparing himself for the practice and responsibilities of an arduous profession, he was able to associate not only with those who were intended to follow in the same path in life, but likewise with friends and companions destined for all other pursuits and professions. Introductory lectures were given by various professors, including Professor Burnett on Botany and Professor Daniell on Chemistry, at the commencement of the winter session of 1831, and a sermon was preached by the then Bishop of London (Blomfield) on "The Combination of Religious Instruction with Intellectual Culture."

The first lecture on the separate opening of the medical session was delivered by Professor J. H. Green in 1832. A systematic course of education was laid down for the guidance of students, and this was recommended to embrace a period of four years, although the College of Surgeons and the Society of Apothecaries then only required a three years' course. The fees for the lectures required by these licensing bodies were £57 15*s.*, whilst £68 sufficed for an unlimited attendance. Medical officers of the army and navy were admitted gratuitously to all classes, and students of the Royal Academy to the lectures on Anatomy. The class-rooms were soon filled, for in 1833 the number of students in the general department was 109 matriculated and 196 occasional; in the medical department 77 matriculated and 233 occasional; whilst 319 boys were in attendance at the school.

In the next ten years the number of matriculated students and of schoolboys had steadily increased, but the occasional students had diminished to about one fourth. Regular schemes of instruction were thus soon preferred by the students to an attendance on separate branches of study. Frequent class examinations were instituted from the commencement, and all students, occasional as well as matriculated, had to attend them. A regular register of attendance on lectures and examinations was also kept, and sessional reports sent to the parents and guardians of the students. In the first medical prospectus, a course of instruction in medical Latin was specially provided, and the medical staff of King's College were even then pressing on the licensing authorities the necessity of making a preliminary examination in Arts compulsory on every medical student.

On the 18th of May, 1832, the Lord Bishop of Llandaff presided at the first distribution of prizes in the Medical School, and in the list of prizemen are the names of two well-known surgeons, the late Mr. John Soden of Bath, and Mr. Edward John Chance of London. In 1833 the Leathes Endowment Prize was instituted, and Messrs. William Harris Leacock and Edward Tweddell Atkinson were the first prizemen; and in 1839 the late Dr. Warneford began his munificent gifts to the College by founding the Warneford Prize, which was first taken by William Allen Miller, who afterwards succeeded Professor Daniell in the Chair of Chemistry. Scholarships for medical students of £40 per annum, for three years, were founded in 1842, and the first holder was Sir George Johnson, our late Professor of Clinical Medicine. The Associateship was founded in 1840, and among the earliest names were Chance, Lee, Johnson, Inman, Parsey, Steele, and Hensley. The Medical Society of King's College was established in 1833, and some of its founders and early officers are still living. Its objects are the cultivation of medicine and the auxiliary sciences by the propagation of a spirit of original observation and research, and of a feeling of friendship and co-operation among those engaged in the pursuit of those sciences. A prize of five pounds was awarded at the close of each winter session for the best essay read during the session, and a similar prize for the best essay on a selected subject. A Resident Medical Tutor was appointed in 1843; Sir G. Johnson was the first tutor, and he was succeeded by Dr. William Brinton in 1850. His duty was to divide the junior students, whether non-resident or resident, into classes of not more than fifteen, to be held for an hour three times a week, and to assist them in overcoming some of the difficulties which they have to contend with at the commencement of their attendance upon lectures. This is the germ from which all the later tutorial education in medical teaching has developed, and which has now in many cases almost ousted the professorial system from its ancient supremacy.

Between 1831 and 1839 many important changes had taken place in the medical staff of King's College. In 1835 David Don, F.L.S., succeeded Professor Burnett in the Chair of Botany. Dr. J. Ayrton Paris followed Dr. Bissett Hawkins in the Chair of Materia Medica and Therapeutics. In 1836, on the resignation of Professor Herbert Mayo, the Chair of Anatomy was divided, and Richard Partridge undertook the teaching of Descriptive and Surgical Anatomy, which he subsequently held for thirty-seven years, and Dr. Robert Bentley Todd was appointed Professor of General Anatomy and Physiology. Dr. Royle succeeded Dr. Paris in the Chair of Materia Medica. Mr. J. Moncrieff Arnott and Dr. Thomas Watson followed Mr. Green and Dr. Francis Hawkins in the Chair of Systematic Surgery and Medicine; whilst Mr. Fergus took over the duties of the Professorship of Forensic Medicine from Dr. Watson, who had discharged them since 1831. A new Chair of Comparative Anatomy was made in 1836, and T. Rymer Jones was elected the first professor. It was during his tenure of the office of Professor of Medicine in King's College that Dr. (afterwards Sir) Thomas Watson delivered those celebrated and classical lectures which founded his own reputation, and so materially assisted in increasing the reputation of the young school.

The chief drawback to the thorough and efficient medical education contemplated by the founders of the College, and one most anxiously felt by the teachers, was the want of a hospital for the purposes of clinical teaching. The students were at that time obliged to obtain practical instruction and ward-work at the existing hospitals, whose authorities looked with some jealousy and distrust on such of their surgeons and physicians as were engaged in lecturing at the new institution, and it could hardly be expected that King's College students would be greeted with much of a welcome under these conditions. For the due development of the Medical School it had, therefore, become a matter of urgency that a hospital with the requisite number of beds should be obtained, so that the eminent teachers at its head should have proper scope for demonstrating their practical skill as well as their acknowledged theoretical efficiency, and that the students might have a full opportunity for pursuing their clinical studies.

In the year 1839 King's College Hospital was opened on the site of the old St. Clement Danes Workhouse in Portugal Street, Lincoln's Inn Fields. The Council of King's College, "finding that hospital practice in connection with and in the vicinity of the said College was indispensable for the complete education of its medical students, did in the year 1839 take measures for the formation in the parish of St. Clement Danes, in the county of Middlesex, of a public hospital for the relief of poor, sick, and infirm persons, to be supported by voluntary contributions, and to which the students of medicine and surgery belonging to the said College might, under proper regulations, for ever have access." One hundred and twenty beds were at once made available for teaching purposes. Its position in one of the poorest and most densely populated districts in the metropolis secured its being constantly filled with the worst cases and most varied types of disease. The establishment of the hospital necessarily led to further changes in the teaching staff. Dr. Watson and Mr. Arnott, electing to remain on the staff of the Middlesex Hospital, resigned their professorships, and were appointed consulting physicians to the new hospital, and were succeeded in the Chairs of Medicine and Surgery by Dr. George Budd and Mr. William Fergusson. The first members of the Hospital staff were—Surgeons: Richard Partridge and William Fergusson. Physicians: Robert Bentley Todd, M.D., and George Budd, M.D.; Robert Ferguson, M.D., for diseases of women and children. Assistant Surgeons: William Bowman and John Simon. Surgeon-dentist: John Tomes. In 1841 William A. Guy, M.B., was appointed Assistant Physician with care of out-patients; Arthur Farre, M.D., Physician-Accoucheur and Assistant Physician for diseases of women and children. In 1841 Dr. Arthur Farre followed Dr. Robert Ferguson in the Chair of Obstetric Medicine, and in 1844 became full Physician for diseases of women and children (Dr. Robert Ferguson joining the consulting staff), and Mr. Samuel Cartwright followed Mr. Tomes as Dental Surgeon. The first House Surgeon was Henry Lee, and the first House Physician Henry Elton. A more distinguished staff could not have been brought all together, and the mere record of their names must make every one who has been educated at King's College Hospital feel proud of the first teachers at his *alma mater*. Out- and in-patient clerks and dressers, a house surgeon, and a physician's assistant (house physician) were selected by examination, and were to serve for three months in the out-patient offices, and for six months in the in-patient and in the resident appointments. The fee for matriculated students for perpetual attendance on the practice and clinical lectures was thirty guineas.

The building on which the hospital was founded was demised by the Guardians of the poor of the Strand Union, and the churchwardens and overseers of St. Clement Danes (with the approbation of the Poor Law Board for England and Wales) unto the Corporation of the Governors and proprietors of King's College for sixty years at a yearly rent of £300, but before 1849 this accommodation was found insufficient for students and patients. On the 21st of December, 1849, the Court of King's College resolved that the sum of £5000 should be contributed out of the funds of the College towards the building and endowment of a new hospital, and on the 29th of December the Governors of King's College Hospital resolved that the site of the hospital, together with all property belonging to it, should vest in the Corporation of the Governors and Proprietors of King's College for the purposes of the hospital. King's College agreed to pay a yearly rental of £240 to the Guardians of the poor of the Strand Union. At the same time the medical professors and officers of King's College Hospital voted collectively, in addition to individual donations and subscriptions, £3000, and also surrendered £2500 in yearly instalments of £150 from their general fees, and £500 from their fees as hospital teachers. £240 per annum is still paid as a ground rent, and this comes out of the fees of the medical staff. Since the establishment of the old hospital in 1839 the medical staff and the Chaplain have been appointed by the Council of King's College, and the resident Medical Officers have been selected by the Council from among the pupils of the Hospital who are or have been matriculated students of King's College. The medical appointments in the Hospital are made by and are entirely subject to the Council of King's College, and not to the Governors of the Hospital. The cost of the Hospital was not to be less than £40,000, and of course this was only the beginning of the expenditure on the erection and maintenance of such a building as King's College Hospital, which has always been in every decade a model of progress in sanitation as well as in the medical art. In 1861 the present building was erected and opened on the old site. The necessity for the new hospital was shown by the fact that from 1839 to 1849 more than 700 medical students of King's College had received clinical instruction, and more than 150,000 sick and wounded persons had received medical and surgical relief; and that, owing to the great increase in the number of persons applying for such relief, the former building had for some time become totally inadequate for the important objects for which it was appropriated.

King's College Hospital was the first hospital in London in which the superintendence of the nursing of patients, and the use of the wards as a training school, were extended to a voluntary nursing sisterhood—the Sisterhood of St. John's House. The Hospital paid a yearly sum of money to St. John's House for the nursing, but the experiment of a dual management was obviously fated to break down as soon as any real stress arose, for this must necessarily have led to friction between the two independent organisations, whose objects were in many respects dissimilar, and occasionally opposed.

The contract with St. John's House was entered into in 1856, and terminated in 1885, and since then the nursing arrangements have been entirely in the hands of the committee of the management of the Hospital.

In 1838 the Council added a second technical school to the medical, viz. the "Engineering Department," being led thereto by the marvellous growth of the railway system at that time. This has since become the Department of Applied Sciences, and is now a most flourishing branch of the College. In 1847 a third technical school was founded under the principalship of Dr. Jelf for the preparation of graduates and non-graduates for Holy Orders; so that then the College was fully instituted, with its Department of Liberal Education, its Junior Department or School, and its three Technical Schools of Theology, Medicine, and Applied Science. In 1856, evening classes were instituted. In 1866 an Oriental Section was formed, which was improved in 1875, and brought into accord with present needs in 1889. In 1880, Schools of Practical Art were opened in addition to the regular drawing classes of the College and School, and in the same year a Metallurgical School and Laboratory were founded, and since then laboratories for the teaching of Bacteriology, Electrical Engineering, Public Health, Surgical Pathology, and Neuropathology have been added. In 1875 a Civil Service Department, now one of the most flourishing in the College, was started under the management of Mr. Braginton, and its success in training candidates for the numerous appointments in the Civil Service has been exceptional. In 1881, after a large public meeting at Willis's Rooms, a Department for Ladies, with classes at Kensington Square, was formally joined to the College, and became an integral part of the old institution.

(To be continued.)

THE
CURABLE STAGE OF SOME INCURABLE MALADIES.

BY LIONEL S. BEALE, M.B., F.R.S.

CHRONIC RHEUMATOID ARTHRITIS.

FEW subjects of inquiry in connection with disease are of greater interest and importance to the physician, whether viewed from the practical or from the scientific side, than the nature and treatment of those changes which precede the establishment of certain chronic diseases usually depending upon serious tissue changes, when all attempts to re-establish healthy conditions must fail. I propose to select for consideration one of those maladies which are characterised by a long period of preliminary changes. During this period the pathological phenomena, though often attended with severe pain and discomfort, and often regarded by the patient himself as serious, are not caused or accompanied by those progressive and permanent tissue changes and damage to structures which characterise a later stage.

Perhaps rheumatism of various forms, gout, rheumatoid arthritis, and certain forms of severe neuralgic affections are amongst the best suited for illustration, and of these I think rheumatoid arthritis will, perhaps, best meet the purpose I have in view. In this affection the preliminary curable stage is well marked, and, at least in many instances, may be diagnosed with accuracy. It often lasts for a considerable time, and not unfrequently extends over three or four years or even more, while the resulting subsequent tissue changes are considerable and serious. Though some retardation of progress of the latter may be effected by treatment, and pain relieved, the slow advance of the disease, leading to deformity and great restriction of the power of movement, can only in rare instances be arrested, or held in abeyance for any considerable period of time.

During the long period of the preliminary phenomena there may be no indication even of the commencement of those chronic structural changes which are characteristic, and therefore there may be hope of relief and improvement in all cases, and of permanent cure in not a few, if only the right treatment can be carried out and steadily persisted in for a sufficient time. Individual cases differ so much in detail from one another, and at all periods of their course, that precisely the same plan of management cannot with advantage be pursued in all. Nevertheless there are certain broad principles which obtain, and which should be well considered by the practitioner, who will have no difficulty in deciding in which particulars the treatment should be modified in individual cases.

Chronic rheumatoid arthritis commences at very different periods of life, though perhaps the disease occurs more frequently after thirty than before, while towards old age attacks are common, and the good effects following treatment less certain.

Some of the attacks which come on between fifty-five and sixty-five are probably associated with the occurrence of general constitutional changes which mark the passage from advanced middle life to old age. Especially are those who have retained up to this period of life exceptional youth and vigour liable to suffer illness of some kind which may seriously affect the general health, and perhaps result in that condition which is sometimes called a general breaking up, no definite lesion or degeneration in particular tissues or organs being demonstrable. Many of those who suffered from influenza about this age failed to regain their previous state of health, while not a few succumbed. Influenza was more fatal just at this period of life than in younger or older persons, for many over eighty recovered from even severe attacks of this disease.

One remarkable fact noticed for a long time after an attack of influenza was weak digestion, accompanied by light-coloured fæces, and in some cases for months the character was more like that attending ordinary jaundice than that characterising health. The same point has been noticed in many cases of rheumatoid arthritis, and the occurrence corresponds with an increase of the symptoms. It is another indication of the great importance of care as regards the quantity and quality of the food, and shows that anything approaching good living ought not to be permitted.

Between fifty-five and sixty-five, those who have been for years suffering more or less from gouty symptoms not uncommonly exhibit evidence of commencing, if not established, disease of liver, kidneys, heart, lungs, or brain, and some forms of organic disease, long suspected, for the first time become unmistakably manifest. Chronic nephritis often accompanies other changes in the gouty, and, perhaps for the first time after years of gouty troubles, albumen is detected in the urine. One often regrets that the renal degeneration was not discovered at an earlier period of the gouty condition, when perhaps the patient might have been persuaded to radically change his mode of living, and thus degenerative changes might have been prevented, or at the worst postponed for a time, or caused to progress more slowly. The tendency to the occurrence of various ailments at this period of life should be well considered, as it is of the greatest consequence to detect the changes as soon as they commence, particularly in the case of different forms of rheumatoid arthritis, which are not unfrequently complicated by the presence of other maladies, and any enlargement of joints or thickening of tissues or pain in the neighbourhood, and the limiting of freedom of movement, and pain, though slight, should be noted.

Besides the local swellings principally connected with tendons, ligaments, fibrous extensions of muscles, and periosteum, which sometimes change from day to day, there is a certain amount of œdema wherever such swellings are situated. This is sometimes rather extensive, affecting the whole of one or more fingers, or the whole hand or foot—œdema which pits on pressure, but which seldom or never exhibits the characters of ordinary œdema, characteristic of heart or renal disease. In rheumatoid arthritis comparatively little fluid infiltrates all the tissues of the affected part instead of distending the areolar tissue, or being poured into serous cavities as in ordinary dropsies. To obtain pitting it is therefore necessary to press firmly and for a longer time than in common œdema. Pitting is well shown by the pressure of a piece of rather thick string on the skin, or by putting the affected finger or hand in a loop of thick string, to which a weight of a pound or two is attached. The œdema referred to changes much in amount from time to time. It increases when the hands are warm, and is much reduced when they are cold. It is generally very distinct on rising in the morning, and instead of decreasing after free perspiration it is found to increase. Free action of the kidneys, however, is invariably followed by a reduction of the swelling, by increased freedom of movements of the fingers and wrists, and by considerable diminution of the pain in the affected joints, tendons, muscles, and bones.

Such alterations may occur more than once during the twenty-four hours, and without undergoing much change in degree may continue for many months or for years, and apparently without as yet being accompanied by or giving rise to any permanent change. There is no doubt repeated effusion and re-absorption of much of the effused fluid; these processes depending upon alterations in the calibre of the smaller arterioles and veins, and induced through nerve action. Within a short time after free perspiration the cuticle of the palmar surface of the fingers and hands often becomes dry and harsh, but in a few hours it again assumes its soft and supple state and normal appearance. The change in the character of the cuticle shows that the distribution and absorption of moisture takes place even in its superficial layers, many of the cells of which are old and about to be cast off, and which often pass from the very dry to the soft and soddened state and back again in the course of a few hours.

The rapid alteration in both directions, in the size of these swellings on tendons, as well as in those in connection with the periosteum, shows that, at any rate for a period which often extends over many months, they are due mainly to the accumulation of fluid in the tissues. Sometimes they perceptibly increase in size in the course of two or three hours, the increase being accompanied by pain and restriction of movements. Then in an equally short period they may return to their former volume, and perhaps remain without much change for weeks—or they may very gradually diminish in size. As long as these swellings retain this character of rapid alteration there is a prospect of complete recovery, but their persistence is remarkable. I have known this period to extend over more than three years. Time after time we suppose the swellings are disappearing altogether, but one day, and without any explanation being discovered, they again increase in size, and become as large and as painful as ever.

As time goes on, some of the swellings gradually become firmer to the touch, more resisting, or actually hard, while the tissues in the immediate neighbourhood are for a time more œdematous, and readily pit on pressure. The increased firmness is in most cases due to the multiplication of small particles of living matter like leucocytes, and the gradual formation by these bodies of a low form of fibrous tissues. After this condensation has occurred the swellings undergo comparatively little change in volume, and perhaps some of them after the lapse of years may be the seat of irregular bone formation or calcareous infiltration.

The changes referred to in the early stages of the disease are frequently attributed to the weather, but I am satisfied that they mainly depend upon changes in the organism rather than upon external variations in temperature, moisture, or want of sun and air. An injudicious meal, or acid wine, beer, a little derangement of the liver, is often followed by increased swelling and pain of some of the parts affected.

No doubt the view generally entertained that moderate movement of the affected parts is advantageous is correct, but anything approaching fatigue or prolonged or violent movements should be avoided; even a moderate walk will sometimes throw the patient back for a week or two, while slow gentle exercise for a short time will in most cases be beneficial. Massage and gentle movement of the affected muscles and joints, carried out with care and judgment, have been generally advised, and the various plans of external treatment recommended by the physicians in Bath have afforded relief in many cases. But on this matter I would refer the reader to the views expressed by my old friend Dr. J. Kent Spender, in his work on 'Osteo-arthritis' (Lewis, Gower Street).

General tenderness of the skin over the affected parts is often remarkable. Great pain is sometimes experienced in the skin over the elbow, that over the patella, or the point of insertion of the ligamentum patellæ into the tibia. The skin over the great trochanter, that of the heel, and indeed of many other parts, may be affected; and this tenderness may last for weeks or months, with occasional short periods of cessation. It seems to be of a neuralgic character, and is often relieved for a time, though seldom actually cured, by ammonia, quinine, and other tonic remedies. When the tenderness disappears from one situation, after a few days it often affects others, and, like the disease itself, is prone to recur in parts which have for some time escaped from invasion. This tenderness is not relieved by sweating, but often passes away for a time when the kidneys act freely. In fact, pain apparently in the cutaneous nerves, in the nerves of the tendons and muscles, as well as nerves distributed to the deep tissues and synovial membranes of the joints, almost disappears a short time after free action of the kidneys occurs.

Up to the time when the swellings connected with the tendons or periosteum become condensed, and probably till adventitious fibrous tissue is found, and has accumulated and undergone contraction and condensation, the morbid condition ought to be remediable; and as this state sometimes exists for three years or more there is plenty of time to carry out methods of treatment adapted to particular cases, which vary in constitution, age, and surroundings, and require somewhat different management. One would naturally conclude, therefore, that certain broad questions, such as the proper diet, the amount of liquid to be taken in the twenty-four hours, and other general points of first consequence would by this time have been conclusively determined, and that general principles of treatment would have been established. But, as in many other chronic and obstinate diseases, there is great difficulty in persuading patients to steadily persevere in any course for a sufficient time to influence the morbid processes and tendencies which lie at the root of the malady, and which undoubtedly in many cases are not easily overcome. If in these days a sufferer does not find evident improvement in a short time he desires to try another plan of treatment, and looks about for some new curative process, which perhaps to his mind appears more likely to be efficient. Sometimes a patient will conclude that the greater the distance he has to travel in order to place himself under the influence of some particular plan of treatment, or take the advice of some far distant authority, high in public estimation, the better will be his chance of recovery.

We have yet much to learn concerning the minute pathological phenomena which characterise the early stage of many chronic diseases accompanied with the formation of adventitious tissue—diseases which, having progressed for a long period, are for the most part incurable, though not always irremediable. In the preliminary and progressive stage referred to there is good reason for the opinion that the pathological changes even in some of the most obstinate cases might be stayed, and in many a recurrence prevented if only we could feel quite sure of the principles upon which the treatment should be conducted, and the length of time a definite plan may be continued without detriment to the health in other respects. The broad principles of treatment, however, are still in some cases undetermined, and very different views are entertained. No wonder, then, that patients adopt first one plan and then another, and take the advice of many practitioners, and try various medicines in the hope of hitting upon one that does good.

A large number of curative medicines, the wonderful properties of which are extolled in the strongest terms by those who claim to have experienced their potency, are at our disposal. But, nevertheless, we meet with cases that have resisted every kind of treatment that had been suggested,—cases which improve a little from time to time, but fall back again, and at length pass into a condition in which structural alterations of tissues occur, and we are practically restricted to employing means of alleviating pain and taking measures to render the rate of progress of the malady as slow as possible. In such a disease as chronic rheumatoid arthritis we should endeavour to decide as to the general method which seems most likely to modify the course of the pathological changes upon which the disease depends. The first general question of the greatest importance in the management of all cases of rheumatism, rheumatoid arthritis, gout, and some forms of neuralgia, is diet. This has been felt by all practitioners from very early days, and the results of practice confirm the conclusions arrived at from the microscopical and chemical investigation of the minute changes occurring in the tissues affected, as well as the conclusions of physiological research concerning the influence of different kinds of diet upon the general health.

In not a few morbid processes, in the origin and progress of which nitrogenous articles of diet play a necessary and very important part, it is of the first consequence to consider whether these ought not to be much reduced, or altogether withheld for a time. There are often indications that during a long period substances of this class, or compounds resulting from their chemical change, have been accumulating in the system, and some of the excess, instead of being thrown off as in health, has been appropriated by the living matter of certain tissues or organs, the particles formed seriously interfering with their proper action, eventually resulting in the establishment of certain morbid processes, from which complete recovery, after a certain time, is improbable or almost impossible.

In the pathological changes already referred to as occurring in rheumatoid arthritis it is certain that albuminous substances take an active part. Clearly, therefore, the patient should reduce the quantity of this class of foods.

Little meat must be allowed, and gradually the patient may be induced to live without meat of any kind. I have found that no inconvenience or discomfort results from entirely withholding meat for many months, at any rate in the case of those about or past middle age. The patient soon gets into the habit of living upon vegetable food, but an egg or two as well as a fair quantity of milk may be allowed. After this course has been adopted for a month or two evidence of improvement will probably be afforded. The swellings on superficial tendons, which can be easily watched, and the œdema around will be perceptibly less. All pain may perhaps have ceased, and the patient will feel encouraged to persist in the course suggested. In old age an almost exclusively vegetable diet with milk will be found generally conducive to health. It does not cause old people to feel weak, and certainly in the majority of cases it perfectly agrees.

Much has been said against the use of sugar in many departures from the healthy state, and very strong opinions have been given of the ill effects of this substance in gout, many forms of rheumatism, in indigestion, and many other ailments. Even in the healthy sugar does not suit every stomach, and when this is the case certainly it should be avoided altogether, or only very sparingly taken. But with many sugar agrees admirably; and in many forms, and especially in the young, it seems to be a useful article of diet, and is certainly very much liked, and even longed for. Sweet fruits agree with most people, though one here and there cannot eat a single strawberry without suffering pain and stomach derangement.

Ever since I began practice I have been an advocate for sugar, except in those rare cases in which it disagrees with the stomach and gives rise to heartburn or other trouble. In the case of young persons there is no doubt whatever that sugar is advantageous—not when taken frequently between the meals, of course, but with some kind of food at each meal, or with one or two of the meals.

Very interesting are the recent observations of Dr. Vaughan Harley, who has shown, and I think conclusively, that sugar when taken as a food is "an active generator of muscular energy," a "promoter of muscular power"—that it retards the approach of muscular fatigue, and increases the day's muscular work. He also states that as much work can be performed on a diet of sugar alone as on a full diet, and that when sugar is added to a moderate diet the resistance to fatigue is increased.*

Now in rheumatoid arthritis I have put this sugar question to the test. On days when the swelling and pain had somewhat increased, sugar in various forms was taken to the amount of three ounces or more daily without once producing any change for the worse, or giving rise to increase of pain. The experiment has been repeated again and again without deleterious consequences. But some patients may find sugar does not suit them, and must be given up. But to make objections to a moderate quantity of sugar in various forms of gout, rheumatism, arthritis, and neuralgia, and some other maladies, and to allow much more of the meat class of foods than the system requires in good health, is, I venture to think, not in accordance with what we are taught by practical experience, or with what is suggested by reason.

Of the general advantage of easily digestible fats in rheumatoid arthritis I have no doubt. Cod-liver oil has been strongly recommended by nearly all physicians who have had much experience in the treatment of this intractable disease. Milk, cream, and most fats may be given with advantage, particularly if the patient is thin and has been gradually losing weight for some time. Marrow seems to be one of the most easily assimilated of fats, and is borne well in rheumatoid arthritis. It may be lightly cooked and spread on toast. It is possible, too, that it may exert an influence upon the blood, and favour the increase of red blood-corpuscles, as Dr. Frazer, of Edinburgh, has shown to be the case in serious forms of anæmia ("On the Effects of Bone Marrow in Pernicious Anæmia," Eleventh International Medical Congress at Rome, 1894, 'Lancet,' April 7th, 1894). A remarkable case of pernicious anæmia, in which this remedy proved of the greatest service, has been reported by my friend Dr. Danforth, of Chicago, in the 'Chicago Clinical

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* "The Value of Sugar, and the Effect of Smoking on Muscular Work," 'Journal of Physiology,' vol. xvi, p. 97, March, 1894.

Review,' October, 1894, vol. iv, p. 1 ('Chicago Clinical Review' Publishing Company, 951, West Harrison Street, Chicago). Clotted cream, butter, milk, and milk puddings daily generally suit patients suffering from rheumatoid arthritis.

The quantity of liquid taken in proportion to the amount of solid or semi-solid food, especially after middle life, is generally too small to dissolve all that is required, and to effect that free circulation in the interstices of the tissues by which alone their healthy state and activity can be maintained,—too small for the chemical change of the excess of nutritious matters into compounds readily soluble in water and easily removed by the various excreting organs. In this way the undue accumulation of various substances in the tissues occasions impairment of activity, and degeneration of structure is brought about, and many important morbid changes, which often considerably shorten life, may ensue. In gout, rheumatism, and many other conditions there is distinct evidence of this, and from the earliest days of rational medicine attention has been given to the matter, and patients have been placed under methods of treatment which favour the solution and facilitate the removal of the substances by which healthy tissue action is impeded, and which in many instances are the cause of well-known forms of chronic disease.

Hundreds of popular baths and health resorts in every part of the world bear testimony to the healing powers of fresh air and various kinds of water, taken regularly and in quantities more considerable than the patients would think of imbibing at home. Of the benefit resulting there can be no doubt, and year after year the same persons return for treatment to the same springs, often with repeated good effects. But many who suffer from chronic maladies requiring this treatment are unable to change their surroundings, and it is therefore our duty to consider whether they cannot be treated on somewhat the same plan at home. Certainly as regards the increase of fluid this can be done easily enough, and at small expense. Patients may be instructed to take half a pint of water before breakfast, a like quantity between breakfast and the midday meal, and the glass repeated in the afternoon and the last thing at night. Water that has been well boiled may be taken warm in winter, tepid or cold in the warmer parts of the year. Distilled water, aërated if desired, may now be obtained without difficulty, and is well adapted for dissolving various substances which require to be removed from tissues if healthy action is to be retained or restored.

Cases of chronic rheumatoid arthritis not complicated with renal disease certainly get on better when there is free diuresis than when there is free sweating. Indeed, in many cases the malady increases when there is much night perspiration, which may often be checked by quinine, nux vomica, or salicin. The two processes, diuresis and diaphoresis, have been encouraged alternately, and always with the results above mentioned,—reduction of the pain and swelling nearly always following the first, and increase of both resulting from the last. Free diuresis as promoted by three or four pints of water in the twenty-four hours has been steadily kept up for more than two years without any harm resulting, and almost invariably with improvement. All forms of alcohol have been withheld, and even in cases where only a very moderate diet destitute of meat was allowed there was no evidence of loss of strength or weight.

Now if in well-marked cases of a chronic malady, such as established rheumatoid arthritis, one finds a method of treatment may be persisted in for a considerable time with mitigation of the symptoms and steady improvement in the swellings and accompanying œdema, it is reasonable to conclude that if the same plan had been adopted at an earlier period the disease might have been actually cured, especially in the case of those who are attacked at a comparatively early period of life. I have seen great benefit result in cases where the plan has been carefully and steadily pursued in old age. The pain has ceased, and the swellings in almost every situation have been much reduced. The patient, however, must be carefully watched in case the treatment should not suit; but generally with a little management, and by increasing the quantity of liquid by degrees instead of placing the patient on the full quantity at once, the regimen will be well borne, and in many cases it is liked and persisted in for a year or longer without in any way disagreeing or causing inconvenience. As before remarked, many do well and progress steadily without any stimulant; but if patients will not submit to this recommendation, a tablespoonful of whisky or brandy with water may be allowed at two meals daily. I do not propose to discuss the medicinal treatment required in these cases, but in conclusion may venture to offer a few general remarks. The value of alkalies, and of nitrate of potash, of salicin, salicylate of soda, and other remedies is unquestionable. I have found quinine in doses of from three to six grains daily persisted in for some months of great use, and have given with it small doses of nux vomica with benefit. Iron and arsenic are undoubtedly useful. In many instances half a grain of calomel twice a week has been of great service, especially in those cases, by no means uncommon, in which the action of the liver is disturbed and the motions scanty and pale, perhaps for weeks at a time. Ordinary mild purgatives are required from time to time, and among the most useful are magnesia, alone or combined with the sulphate in small doses, cascara, and compound rhubarb and colocynth pills.

THE
ABSTRACTION OF BLOOD CLINICALLY CONSIDERED.

By ALFRED B. DUFFIN, M.D., F.R.C.P.

The clinical value of the abstraction of blood has been advocated upon two chief grounds: firstly, the mechanical relief afforded to some embarrassed portion of the circulation; secondly, its action on the inflammatory process, especially on that known as the "sthenic" type, and at its earliest stage.

It is in observing the relief that venesection affords in certain cases of *heart disease* that we note perhaps its most signal advantages from the mechanical side.

Let us first consider the case of uncomplicated mitral regurgitation. The mechanical obstacle thus set up induces first over-fulness of the pulmonary circulation, then of the right ventricle and auricle. The tension of the blood in the right ventricle is increased, and as a result dilatation of its cavity and hypertrophy of its walls creep on. In this way compensation may ultimately be so complete that, except for the increased tension of the circulation in the lungs, the general circulatory work may be carried on in an almost normal manner, the increased driving power of the right ventricle overcoming the failure at the mitral orifice. But for this to be efficient a certain proportion must exist between the degree of expansion of the right ventricular cavity and the increased power of its walls. This proportion may either never come into existence, or it may subsequently be forfeited. Compensation then becomes inadequate. We get the gorged and distended right heart and lung, possibly with hæmoptysis. Now bleeding is essentially the remedy for an over-distended labouring right ventricle. When we open a large vein we are close behind the right heart, and it is for its especial relief that the operation is performed. Its action upon the right ventricle is readily comparable with that of nitro-glycerine upon the left. The indications are orthopnœa, with great distress and labour of breathing, a livid countenance, pulsating jugulars, and general venous over-distension. If the præcordia are percussed we shall find the area of dulness much increased to the right. There is also often marked tenderness in the scrobiculus cordis. The right ventricular sounds are lost more or less completely; and if at any previous period accentuation of the second or diastolic pulmonary sound has existed, we find that it also has vanished. The lungs will be more or less engorged in proportion to the time that the over-distension of the right heart has existed, and, as already said, we may have hæmoptysis. Such a combination as has been here briefly reviewed calls imperatively for the lancet. Six, twelve, or twenty ounces may be taken. Even while the blood is still flowing the breathing may become quieter, and the patient express relief. Tranquil sleep may follow for the first time during many days. We shall also often find that our digitalis, diuretics, &c., that had previously disappointed us, will begin to act with effect. When aortic regurgitation co-exists the strong left ventricle adds to the backward tension, and the conditions are all the more striking. Usually in these mixed cases mitral failure creeps on very slowly, and the case only gradually assumes a mitral type. Provided time is afforded for the right heart to undergo compensating hypertrophy this change of type is rather to be welcomed, as the risks of over-distension and paralysis of the left ventricle are thereby greatly reduced. But when the event occurs suddenly, as after some exertion, then the picture delineated above comes out with all its force, and only the free withdrawal of blood will enable us to save life. Indeed, nature often suggests the treatment by inducing free or even alarming hæmoptysis. I would, however, at once guard against the idea that every failure of compensation must necessarily be met by opening a vein. We know that the evidences of most of these lie altogether behind the right heart, such as passive engorgement of the liver or kidneys, or general dropsy. Each of these calls for its own appropriate method of relief, with which we are not concerned in this paper. Still even with them the withdrawal of blood from the arm is often of some indirect service.

In many cases of *chronic bronchitis* and *emphysema* we shall also find the importance of coming to the relief of the right ventricle. The circulatory conditions here, however, are rather complicated, and call for a short analysis.

Pulmonary *emphysema*, whilst obliterating a number of air-cells, simultaneously destroys a large number of the pulmonary capillaries. The aërating surface and the circulatory area are thus proportionately reduced. Backward action on the right heart is bound to follow. But the pulmonic circulation is, after a while, assisted in two ways. Rindfleisch has described anastomoses as opening up directly between the branches of the pulmonary artery and those of the pulmonary veins, thus escaping the pulmonary capillaries altogether. Through this means a quantity of unaërated blood may be poured directly into the left auricle, and so into the general circulation. A second way of escape is by anastomosis with the bronchial veins. A communication is thus established between the pulmonary and the systemic circulations, with the primary effect of engorging the bronchial mucous surfaces. A link is thus established between the bad effects of emphysema and those of bronchitis. I have known a bronchial hæmoptysis to amount to over a pint. Turning in the second place to the effects of *bronchitis* on the pulmonary circulation, the onward flow in the pulmonary capillaries is maintained by two distinct forces. The one is the propulsive power of the right ventricle; the other is the chemical interchange of gases that takes place in respiration. If this latter be seriously interfered with, the capillary current will be retarded or even entirely arrested. Take the extreme case when the supply of oxygen is suddenly cut off from a healthy lung, as in strangulation. What ensues? The lung is found pale and bloodless, as Sir George Johnson has shown, but the right heart enormously distended, almost to bursting. Here the circulatory arrest is of purely chemical origin. Now in a slower manner the same holds good in bronchitis. In a severe case the swelling and effusion into the smaller bronchial tubes prevents the access of oxygen to the pulmonary capillaries, and this may occur even before much emphysema has developed. Once again the blood is pondered back upon the right heart. The systemic veins become greatly engorged. Still, as Dr. Wilks justly says, the man has no cyanosis proper. After a time the dilated right heart becomes hypertrophied, the driving power through the lungs is thus increased, the venous engorgement disappears more or less completely; but the bronchial tubes are as choked as ever, the access of oxygen to the lung is no better, aëration continues to be badly performed. But the strong hypertrophied right ventricle is now capable, mechanically, of overcoming the chemical resistance to the flow through the capillaries, and also the secondary spasm of the small arteries that Sir George Johnson has shown to be associated with this condition. The unaërated blue blood is now driven forcibly clean through the lung into the left heart. This, in its turn, now sends not bright arterial blood, but dusky venous blood through the arteries into the systemic capillaries, and the patient assumes a uniformly bluish or dusky appearance. This is not due to over-venous distension, but to the circulation of unaërated blood in the systemic arteries. We have here true cyanosis. We thus see that over-distension of the right heart may be produced in two ways. The emphysema may extensively obliterate the pulmonary capillaries, or the mal-aëration consequent upon the bronchial block may directly arrest the flow through these same channels. To some extent relief may be afforded by the opening up of collateral channels, but this is at the best very inadequate. Ultimately our only solid relief rests in hypertrophy of the right ventricle, but this often fails us. The attack may have been too rapid and extensive for hypertrophy to be possible, or the gradual extension of the malady may have overtaxed its powers, or the ventricle itself may be passing into secondary degeneration. For any of these reasons it may be urgent to come to its relief, and the use of the lancet may be indicated.

We must, however, carefully discriminate between two conditions. When we see a man much choked, labouring hard with his breath, and, furthermore, with his veins distended, his right heart dilated, then our bleeding will be of signal service. Some men are deterred by the smallness of the arterial pulse; but this is exactly what we should anticipate. The lungs are choked, the driving power of the right ventricle is reduced to a minimum, therefore very little blood reaches the left heart at all. On the contrary, the smallness of the pulse is an indication calling for action. Often after a free bleeding we shall find the pulse far fuller and better than before. Now against the conditions thus described I would wish to contrast the following. A man is choked by bronchitis, but his right heart is acting strongly; he is uniformly dusky from the free circulation of black blood in his arteries. He not only has plenty of pulse, but of a high tension from the quality of the blood the artery contains. His venous system and his liver are not gorged. Bleeding will afford no relief to such a case. The right heart is able to take care of itself. What such a man wants is to have his choked bronchial tubes unloaded, so that oxygen may again reach his pulmonary capillaries. For such a one a good brisk emetic and the use of respiratory stimulants, such as ether and ammonia, are rather indicated. It is, to a great extent, owing to the failure to discriminate between these two classes of cases that a useful remedy has fallen into disrepute. We owe a deep debt of gratitude to Dr. Wilks for the light that he has thrown upon this difficult subject.

In *capillary bronchitis* mal-aëration may also be so extensive as to induce a real arrest in the pulmonary capillaries. In those rare cases where it affects adults you will find advantage in relieving the right heart by a bleeding of from four to twelve ounces. Should you be dealing with a weakly subject or a broken-down old man, you will require to be very circumspect in this matter; but if suffocative signs with greatly distended veins come on, even in such a one a moderate bleeding may give relief. Our great difficulty in these cases is the inherent feebleness of the right ventricle, which cannot respond to the call made upon it. A parallel position holds true of children. A strong, sturdy child, if dusky with capillary bronchitis, may bear a few leeches on the chest, but with delicate ones no removal of blood should be undertaken.

Next in order we will take up *acute lobar pneumonia.* Whatever may have been the type that Broussais and Bouillaud saw, we of this generation confess that we have to deal with a disease of a depressing order, and that it is worse than useless to attempt to knock it down with repeated bleedings. But are there no circumstances connected with pneumonia that may call for the use of the lancet? I think yes. When a large amount of lung is rapidly involved cyanosis sometimes appears, with all the signs of dilatation of the right side of the heart. We have a combination of the dusky countenance with distended jugular veins, epigastric pulsation, extreme labour as well as rapidity of breathing, orthopnœa (so rare in ordinary uncomplicated pneumonia) in contrast with a small thready or imperceptible pulse. The distress of the patient is often extreme. Six to twelve ounces of blood may be taken from the arm with manifest immediate relief. I cannot help thinking that this has also a collateral good effect on the future course of the case. We should not, however, seeing the character of the disease with which we are dealing, push our bleeding beyond the point where distinct relief appears. Even in young children this same emergency may confront us. Dr. Eustace Smith tells us that where there is great dyspnœa and threatened cardiac failure from the over-distension of the right side of the heart, life may be saved by taking one, two, or three ounces of blood from the arm according to the age of the patient. He continues, "I can look back to some fatal cases which I now believe might have been saved had I had the courage to relieve the labouring heart by judicious removal of blood." This by no means excludes the simultaneous use of stimulation, digitalis or strychnine. It is perfectly consistent to unburthen an over-distended right heart whilst supporting its power with free stimulation, whether medicinal or alcoholic.

We next pass to the *serous surfaces,* and first the *pericardium.* Among its earliest symptoms is a sharp pain in one or more intercostal spaces. There are many ways of dealing with this, but perhaps none so effectual as two or three leeches applied over the tender spot. My own belief is that this pain is generated in the intercostal space itself, and that the action of the leeches is thus purely local. But Sir George Johnson, in the last edition of 'Watson's Practice of Physic,' says, "Bear in mind the arterial connection which subsists between the surface here and the deeper parts beneath. The internal mammary artery feeds both the pericardium and the precordial integuments. The suction of leeches applied over the site of the heart abstracts blood from the superficial branches, and thereby in the same proportion diverts blood from the deeper pericardial branches of the same artery. Its strongest curb is thus placed on the local inflammation." Even admitting that this power of diversion exists, I confess that it is a little difficult to see how its action on the internal mammary artery, which supplies only a very small portion of the external pericardial layer, can influence the course of a pericarditis, especially when we remember the small quantity of blood that a few leeches can remove. As far as my experience goes the local pain is relieved, and this is well worth having, but the pericarditis runs its course. In those severer cases where there is much orthopnœa, distended jugulars, irregular pulse, and what has been termed "arterial anæmia," the abstraction of four to six ounces of blood is most valuable, provided we can first be satisfied that these symptoms do not depend on the excessive effusion into the sac. Here, again, the difficulty we relieve is purely mechanical. The course of the pericarditis goes on its usual way, nor can we by any amount of abstraction of blood limit the extent of the serous effusion.

With reference to the stitch in *pleurisy,* I am much inclined to believe with Mons. Beau that it arises in the intercostal space, and is therefore only indirectly dependent on the pleurisy. However this may be, there can be no question that signal belief can be given by the application of a few leeches. I do not, however, believe that any number of leeches will modify the course of the pleurisy. There is, nevertheless, one rare complication of this affection in which free bleeding will save life. I allude to true diaphragmatic pleurisy. I understand by this not only that the serous surface overlying the diaphragm is involved, but that one of the muscular curtains has ceased to act. I can, perhaps, best illustrate the position by a case. I was staying with an old "King's" man in the country. He was called to see a female servant whom he found sitting up in bed, dusky in face, with the most urgent dyspnœa. He described her as breathing in the most "lop-sided" manner he ever saw. We found the breathing on the two sides of the thorax to be carried on in the most wonderfully contrasted manner. The left side did not expand in the least with inspiration, but rather the lower ribs "tucked in," just as you see in a child with an acute obstruction in its windpipe; the left abdominal wall was also retracted with every inspiration, pushed outward with every expiration. The right side of the thorax was acting in a normal but exaggerated manner. Our physical signs revealed to us moderate pleuritic effusion at the left base, and a patch of pneumonia in the middle of the right lung. The veins and the right heart were manifestly distended, the pulse at the wrist imperceptible. We determined to bleed this poor woman freely, and we there and then removed twenty-five ounces. The breathing at once became easier, the pulse at the wrist reappeared, the heart-sounds could again be detected over the right ventricle, and patient expressed relief. Even after this immediate danger had thus been overcome the case long continued to be an anxious one, as we had our pleurisy and pneumonia in both sides of the thorax, and, of course, our paralysed diaphragmatic curtain to complicate matters. Ultimately the case recovered completely.

In *pneumothorax*, when the collapse of the lung is rapid, the dyspnœa is due not only to the diminution of the aërating surface, but also to the partial arrest of circulation in the collapsed portions. This again increases the tension in the pulmonary artery and right ventricle, and the usual evidences of this complication may be observed. A moderate venesection here gives great relief. In milder cases leeches or cupping may suffice. This may with advantage even precede the tapping of the pleura with a fine trocar to evacuate the air.

In *thoracic aneurism* the pressure signs on the superior cava, and still more those on the pulmonary artery, may occasionally be relieved for a time by a moderate abstraction of blood. The value of this is seen even more forcibly in *mediastinal tumours*, in which, as is well known, the veins are more apt to be extensively implicated than in aneurism. But in thoracic aneurism itself venesection may do us a further service. It often relieves the painful tension of the sac most remarkably. This pain, which may hitherto have resisted sedatives of all sorts, is often allayed, and the man will get a good night's rest after his bleeding. I am inclined to believe also that it may indirectly assist the action of our iodide of potassium. I would never go beyond six or eight ounces, even in a strong subject, because we must not impoverish the blood mass, and so induce irritable heart.

Next perhaps to pneumonia, *acute peritonitis* has been the greatest battle-field as to the advisability of bleeding. We find Sir Thomas Watson writing, " As early as possible after the inflammation has declared itself the surface of the belly should be covered with leeches. From twenty to forty may be applied at once." But if we turn to Dr. Hilton Fagge's work we find this energetic treatment reduced to " a few leeches may be applied to the most painful part of the abdomen with advantage." The more we consider the causes that lead up to peritonitis, the evidences of acute shock that so often go along with it, and the little power that loss of blood *per se* can exert over the inflammatory process once fairly started, the less, I think, will we be inclined to resort even to the "few leeches " mentioned above. For my own part, I have never seen leeches do anything that opium would not have done much better; and in my earlier days I have seen leeches applied by handfuls. Where opium is given at the same time I should be inclined to ascribe the benefit to it only.

The case of *acute nephritis* claims a moment of attention, whether produced by cold or by the presence of the scarlet fever or other specific poison. As a matter of clinical experience the derivation of blood to the surface of the loin is well known to have a most favorable bearing in these cases. Sir George Johnson points out that a close arterial link of connection exists between the inflamed organ and the site of the local bleeding, the renal artery and the main lumbar branches coming off close together. But the communication between the loin and the kidney is even more direct than this. Since the researches of Cohnheim and of D. M. Litten ('Zeitschrift für klinische Medizin,' vol. i) we know that the communications between the kidney and the loin through the capsule are much more extensive than were formerly supposed, and, as they have pointed out in their works on embolism, the action on the glomerular element is very marked. It thus becomes doubly intelligible how the suction action of cupping-glass may be derivative on the circulation in the kidney.

In the convulsions of *uræmia* a free bleeding will now and again prove of manifest service, probably chiefly by lowering tension. It is in the acute form of uræmia that this result is most likely to be obtained. In the far commoner progressive form, where the uræmia creeps on gradually for several days or weeks, I must confess that bleeding has disappointed me.

Another example of the value of derivation to the loin is presented to us by that very painful affection, common *lumbago*. Dr. Hare ('Good Remedies out of Fashion') graphically describes this. "A man previously feeling well is seized while pulling on his boots with a pain that grips him across the loin like the clutch of a tiger's paw; to stand up or even move one iota from his chair becomes impossible. Dry cupping over the affected muscles sometimes achieves a miracle." In the rheumatic form of lumbago a good dry cupping will also be found a useful adjuvant to other treatment, although its immediate effects may not be so striking.

Turning finally to the *cranium*, the tendency of modern practice is more and more to distrust the use of the lancet in cerebral hæmorrhage. Firstly, the clinical proof of the fact is often dubious, and in the next place the consideration of the hydraulic condition of the cranial cavity, and the remoteness of the point we can tap from the site of an arterial hæmorrhage, all make us very sceptical as to its utility. There is, however, one condition in which we may, to some small degree, be of service. When the breathing is very laboured, the surface veins full, and the face congested, the outflow from the veins within the cranium must be especially impeded. By withdrawing blood we may assist in lessening the block from the venous side, and so far reduce the tension within the skull. Unfortunately these conditions are found chiefly where the bleeding is already sufficiently large to interfere with the work of the medulla oblongata, and we therefore for the most part bleed in vain. If we look into the works of our older authors we shall find them describing cases in which the man falls in a "fit," and is at once bled freely with almost immediate return of consciousness. The tendency of the present day is to regard many of these as examples of erroneous diagnosis. Epilepsy, a feeble, overladen right heart, or uræmia would probably explain away a good many of them.

Acute primary meningitis is, as far as my experience serves me, a very rare disease. With the tubercular form we are only too well acquainted. We also frequently see it in surgical practice as a septic disease following the most various cranial injuries. Except for the relief of pain, and then only very cautiously, I doubt if anyone now-a-days would bleed for either of these. With acute primary meningitis the case may be different. Mere cupping over the nape of the neck or free leeching to the temples or jugular region would certainly be reasonable suggestions, but I have no experience to guide me. I think also that we should be very careful how we accept this diagnosis. The delirium is said to be very active. Some of the most violent examples of delirium I have ever met with have been in connexion with the acute up-rushes of temperature we find ushering in smallpox, pneumonia, and other specific fevers. I need not say that the error of delirium tremens is one to be scrupulously avoided.

There are two types of *headache* in which I have found decided advantage in applying a few leeches to the temples. The one occurs in children who are working hard. As a lad I used to be especially liable to this form, a dull, tensive, occasionally throbbing headache occupying the whole cranium, persisting throughout sleep, and lasting for several days. My father used to put three to six leeches on my temples, and the headache would be over in half an hour. May the attitude at the desk, hampering the return circulation from the head, have anything to do with these headaches?

In elderly people, especially among women, we occasionally meet with what I would call the headache of passive congestion. Its symptoms are almost the counterpart of those just alluded to, but are associated with much venous engorgement and usually a feeble, dilated heart. The relief a few leeches bring in these cases is very marked, but unfortunately it is only temporary.

A CASE

OF

FUNCTIONAL ALBUMINURIA.

By NESTOR TIRARD, M.D., F.R.C.P.

On October 16th, 1894, a patient, H. L—, aged 20, presented himself in the Out-patient Department, and wished for an opinion. He stated that, after medical examination, he had recently been rejected for an appointment in the Post Office, and that he was unaware of the cause. He made no complaint of his health beyond admitting that he sometimes had some slight epigastric pain. As he did not look very robust, inquiries were made for lung symptoms, when he stated that occasionally he had slight cough and brought up some mucous expectoration. He had never had hæmoptysis, and there was no family history of consumption. His chest was examined with negative results, but on listening over the heart some reduplication of the second sound was heard. His pulse was of normal volume and tension. He was then asked to pass some water, and the urine was found to have a specific gravity of 1022; its colour was the usual sherry tint, and a fairly large proportion of albumen was demonstrated by Heller's contact test, by boiling with nitric acid and by boiling with picric acid.

With some hesitation I ventured to express the opinion that in all probability we should find that this was a case of functional albuminuria, my reasons being based upon consideration of the absence of any predisposing cause for an acute or chronic albuminuria, upon the specific gravity and colour of the urine, and upon the absence of any symptoms referrible to the condition of the water. The nature of the sounds of the heart, however, called for a certain amount of caution, but the absence of any change in the pulse led me to hope that the reduplication might not be symptomatic.

When this patient was seen the following week, October 23rd, he still made no complaint of his health; he said he felt quite well, and evidently expected that our tests would agree with his sensations. The urine was still of good colour, and the specific gravity was 1020. On first testing it with cold nitric acid no reaction followed, but after the test-tube had been allowed to stand for a few minutes a faint cloud appeared as a very fine line just above the level of the acid. On October 30th the amount of albumen seemed rather more, but on November 13th he brought a specimen with which none of our tests could show the faintest trace of albumen. This specimen had, he said, been passed before lunch, so we got him to pass some urine in our presence, and in this we found a faint trace of albumen.

As it stands, this case appears to me to be fairly typical of the class of functional albuminuria, a class which is perhaps more familiar to those engaged in insurance work, and in medical examination of youthful candidates for appointments, than to those whose experience is drawn more purely from hospital and private patients. The chief feature of these cases is the almost total absence of symptoms. The occurrence of the albumen has been variously explained. Moxon described an albuminuria of adolescence, which in the hands of other writers has been changed into a charge against the habits of the individual. Pavy and others employ the term cyclical albuminuria to embrace those cases where at some time in the day the urine is found to be free from albumen, while after meals or exercise a small trace may be present. Clement Dukes appears to consider that the cause may be found in some deficient vasò-motor action; he noted that in many such cases the albumen could only be detected after the individual had assumed the erect posture. Many years ago Sir George Johnson, by a series of experiments voluntarily conducted by medical students, showed that a transient albuminuria might result from prolonged immersion in cold water. From the frequency with which the amount of albumen is increased after meals some authors prefer to recognise a true dietetic albuminuria, and refer the condition either to the over-consumption of albuminous foods or to some defective metabolism.

In all of these cases, however, the important point is to distinguish a functional transitory condition from chronic kidney disease, and the diagnosis is not always easy. It must be remembered that in the early stages of chronic kidney disease the albumen is by no means constantly present, and that the amount is subject to considerable variations with changes of diet and of exercise. I have, at the present time, two children under my care at the Evelina Hospital who illustrate this point in a very marked degree. In the one, a boy of four years old, who is in the later stages of an acute attack, nearly every attempt to change from milk diet has been followed by reappearance of albumen; and in this case we have found that even while on milk diet albumen was present on the days on which he has been allowed to get up. The other boy, nine years of age, who came in with more chronic symptoms, also shows the same sensitiveness to similar alterations, and though his urine now shows no albumen I cannot regard the case as free from anxiety about the future.

Undue stress cannot be placed upon the absence of symptoms, since in many cases of advanced kidney disease the patient may be wholly unaware of his condition, which is perhaps only revealed when he presents himself for examination for life assurance, or when the urine is casually examined by a medical friend. I have recently had an example of this brought under my care in the person of a retired naval officer, who, when travelling in Norway with a doctor as his companion, had his water tested as a joke with no suspicion that there might be anything the matter with him, and the presence of a large quantity of albumen led to further investigations. When I saw him there were undoubted signs of hypertrophy of the left ventricle, there was reduplication and accentuation of the second sound at the base of the heart, and a marked high tension pulse; and yet, to all outward appearance, this gentleman was in perfect health, leading an active country life, and in no way inconvenienced by the existence of this chronic disease.

The recognition of functional albuminuria, at all times a matter of difficulty and of some uncertainty, can best be made by a consideration of the age of the individual, by the absence of predisposing cause, by the nature of the urine, its good colour and specific gravity, by the small and usually variable amount of albumen, and by the absence of indications of change in the cardio-vascular system. The existence of casts mostly affords very little aid: it is now well known that tube casts may be present in cases of simple congestive albuminuria; they do not necessarily indicate chronic kidney mischief. Further, with regard to the method of testing: those who were present when this man was before us will remember that I pointed out the difference in result according to whether the urine or the nitric acid was first placed in the test-tube. When the acid is put in first, although the line of opacity is well formed immediately above the acid, the result is not nearly as readily evident, and the band of opacity is not so wide as when the urine is poured in first, and the acid allowed to trickle in slowly along the side of the sloping tube. I lay some stress upon this point in practical work, since when dealing with these small traces of albumen it is important to employ a test which will give a rapid reaction which can be readily recognised. On the occasion when the zone appeared only after the specimen had been allowed to stand, the test-tube to which the acid had been added after the urine gave the first indication of a cloud, and the opaque zone which ultimately formed was much broader and more evident than in the tube in which the urine had been added after the acid.

I would further lay stress upon the importance of repeated examinations of urine passed at different times of the day; and on different days, and, so far as life assurance is concerned, upon the absolute necessity of examining only specimens of urine which are passed in the presence of the medical examiner. It will have been noted, in the patient who forms the subject of these remarks, that the only specimen which was absolutely free from albumen was that which he brought for examination; and on a specimen thus obtained it would indeed be rash to form conclusions affecting the patient, unless it is supported by confirmatory tests applied to a specimen passed at the time.

A word should perhaps be added concerning the future of these cases of functional albuminuria. I certainly do not hold that the condition is ever to be regarded as physiological; but, on the other hand, it is, I consider, equally certain that a large majority of these cases tend to complete recovery and disappearance of albumen. Clement Dukes maintained that a considerable proportion of the cases never recover, but progressively increase, and he suggests that the term "early albuminuria" would be more correct than "albuminuria of adolescence" or "functional albuminuria." When the condition has been found in youths soon after the age of puberty, and without a history of a preceding acute attack, and without symptoms or alteration of the urine other than the minute trace of albumen, my experience is that recovery may be confidently anticipated, especially if, as is so frequently the case, some slight degree of anæmia can be rectified by the administration of iron, arsenic, or the arseniate of iron in conjunction with a mild non-astringent iron preparation. The outlook is most hopeful when the condition is associated with slight dyspeptic symptoms, but modifications of habits and regulation of diet can mostly be trusted to remove the last traces of albumen.

PSYCHOLOGICAL MEDICINE IN RELATION TO THE MEDICAL PRACTITIONER.

By ERNEST W. WHITE, M.B., M.R.C.P.

The importance of psychological medicine to those engaged in the general practice of the profession is evident when one considers the proportion of the insane to the sane population. There are in England and Wales alone nearly 93,000 lunatics, idiots, and persons of unsound mind, and the return showed on the 1st January last an increase of nearly 2,245 for the year 1893, the largest annual increase as yet officially recorded: this gives 1 insane person to every 326 of the population. In 1883 there was 1 to every 347, in 1869 1 to every 418, and in 1859 1 to every 536. This relative increase is to be largely accounted for by the better provision made for, and more exact registration of the insane, as well as by the high pressure at which we live, and the increased prevalence of nerve disorders consequent thereon.

The certification of the insane rests with the medical practitioner, and it is to him a duty both difficult and responsible. How can he be expected properly to discharge this duty unless he has received special instruction thereon? The Lunacy Act of 1890, supplemented by a short Act in 1891, contains no fewer than 342 sections. It very rightly surrounds with additional safeguards the liberty of the subject, and renders the process of certification more complicated than formerly. At the same time it protects the medical practitioner who conscientiously discharges his duty in this respect, but bristles with penalties for those who, by acts of omission or commission, infringe its clauses. A further feature of this Act is the increased facility afforded to County Councils and Corporations for offering suitable accommodation for private or paying patients, an opportunity of which several Councils and Corporations have already availed themselves. We have, at the present time, upwards of fifty paying patients at the City of London Asylum at Dartford.

One is frequently struck by the imperfect knowledge of psychological medicine possessed by the general practitioner, and especially of the salient points upon which his certificate should be based. It would be interesting to know what proportion of these has in the past been returned by the Lunacy Commissioners for correction. One in five would be about the average. In many instances the errors are clerical, and mainly those of omission arising from want of attention to the various side-notes on the form ; in other cases Facts (A), those observed by the medical practitioner certifying, are inadequate. It must be remembered that these Facts (A) are essential to the certificate ; whereas Facts (B), those communicated by others, are not. Facts (A) should embrace—

1. Most evident insane delusions—if statements of patients, add which are delusions.
2. Incoherence.
3. Excitement or despondency.
4. Loss of memory and reasoning power.
5. Patient's appearance, shape of head, expression, manner, changes from normal state, symptoms of G. P., moral change.
6. Negative signs, insensibility to impressions, taciturnity.

The difficulty of the subject is enhanced by remembering there is no sharp line of demarcation between sanity and insanity. It is only when the patient, by virtue of his actions or otherwise, becomes a source of danger to himself or the community that the State or his relatives intervene, and the legal machinery whereby he is to be deprived of his freedom and placed under special treatment is set in motion. Long prior to this, in many instances, he has been more than eccentric, the eccentricity having been shielded by friends from dread of publicity. It is in this early stage, when the prodromata of the several forms of mental derangement are in many cases well defined, that the correct diagnosis by the medical man in attendance is of great value. Many a homicidal act might be frustrated, and many a suicide prevented, if their first symptoms were more fully recognised. These prodromata are (*a*) moral (morbid perversions of the feelings, affections, temper, habits, and moral dispositions) ; (*b*) intellectual (increased mental activity, excitement, diminished mental activity, lethargy, and despondency) ; and (*c*) physical (embracing the early nerve symptoms of general paralysis, altered reflexes, muscular tremors, and local paralyses).

Again, the medical attendant is often consulted with regard to the mental fitness of the patient for the completing of testamentary and other legal documents. Again, he is the adviser upon the educational strain to which the schoolboy should be subjected, and often as to the path in life for which he is fitted. Again, he is appealed to when the spendthrift husband is scattering broadcast his personal estate, so that his family is brought to the verge of ruin, a condition so common in the early stage of general paralysis of the insane. And yet again, his opinion is sought in criminal cases where the responsibility of the accused person is called into question. When we consider all these facts, and, moreover, bear in mind that it is in the early stages when disease is functional, before organic change is established, that these mental ailments are eminently curable, and lasting insanity with all its attendant sorrows can be obviated, surely the medical council has acted wisely in making it a *sine quâ non* that the curriculum of the medical student shall include both theoretical and practical instruction in mental diseases.

The City of London Asylum, the five asylums for the county of London, and Bethlem Hospital have recently been recognised as educational centres in this subject by the conjoint board of the Royal Colleges of Physicians and

Surgeons of England, and a post-graduate course for the benefit of London and suburban practitioners is regularly given at Bethlem Hospital. Surely the time has arrived for the throwing open under proper restrictions of the county and borough asylums throughout the country for the benefit of the general practitioners resident in their vicinity, in order that they may be placed on an equal footing with their, at present, more fortunate brethren of the metropolis. I know of no work more interesting and beneficial to a resident physician than the clinical demonstration of his cases, and the county and borough asylums are at present to a large extent unworked mines, replete with latent knowledge for the general practitioner. The King's College class in Psychological Medicine has during the past five years visited the City of London Asylum on Saturdays during the summer session for clinical instruction. For the early treatment of borderland mental cases an out-patient department has been started at St. Thomas's Hospital, London, and at the West Riding Asylum, Wakefield. Surely a similar line of action might be adopted at county infirmaries and the asylums generally. Early treatment by skilled physicians will ward off many an attack of mania or melancholia, while for acute cases demanding asylum treatment the Urgency Order of the recent Act meets all requirements. And here let me draw attention to the real and vital importance of early diagnosis and treatment in mental disease. The highly organised and delicate nature of the structures with which we deal demands active and scientific management, such as can only be obtained in most instances in specially adapted institutions. You see the proper treatment is quite as much moral as medicinal, and the great advance of recent years in the recovery rate of the insane dates from the recognition of the importance of environment. Formerly a recovery rate of from 20 to 30 per cent. on the admissions was deemed satisfactory; now we look for a rate of from 40 to 50 per cent. at least.

In the necessity of moral treatment is the great difficulty which surrounds the management of recent cases at their homes. The friends desire to keep things quiet; yet the patient if acutely maniacal must have outdoor exercise daily, and if melancholic must be roused from the state of despondency. Too often in the past, in order to keep the family trouble secret, chemical and general restraint have been resorted to, and permanent injury to the patient's nerve-cells thereby induced. Consider for a moment the treatment of a case of acute mania to-day. There must be no bodily restraint or seclusion, therefore a padded room is necessary, with an attendant at the partly closed door. Nourishment must be given often and liberally, even to what may appear to be excess. Instrumental feeding twice or thrice daily may be necessary. During the twenty-four hours we give the patient from two to three pints of good beef tea, a similar quantity of milk, and from five to six eggs beaten in the feeding mixture ; often, if there be much exhaustion, from four to six ounces of brandy in addition, and any other food he can be persuaded to take.

Daily in the morning and again in the afternoon the patient goes out for exercise between two attendants or nurses, for from half an hour to an hour, to encourage natural appetite and induce normal sleep. We give as little chloral, sulphonal, and the like as possible, and only to overcome insomnia which will not yield to natural means.

As with acute mania, so with acute melancholia, where artificial feeding is more often necessary, and continuous observation essential to guard against suicide.

You must also remember that the attendants and nurses who have charge of these patients must be specially trained. For this end a certificate is granted by the Medico-Psychological Association after two years' special training and examination. But few of these nurses are available for private care.

Given a house with spacious grounds, specially equipped and with a proper medical and nursing *personnel,* I am of opinion a case of recent insanity can be as well treated under single care as in an asylum ; but failing the means to meet this outlay, I am sure the asylum of to-day, with its highly trained *personnel,* spacious grounds, home-like comforts, social amusements, freedom from the injurious influence of too sympathetic relations, and absence of restraint, offers the best prospect of recovery. The time has come for the word "asylum" to be replaced by "hospital for mental diseases," when much of the stigma attaching to insanity and the chief obstacles to early treatment will have been removed.

When a patient is brought to us we know nothing of him or his family. We must be informed regarding the predisposing and exciting causes of the attack, his previous habits, whether active or sedentary, temperate or otherwise, whether he has experienced any former attacks, and, if so, at what periods; whether any relatives have been subject to insanity; and whether the present attack has been preceded by any premonitory symptoms, such as restlessness, unusual elevation or depression of spirits, or any marked deviation from ordinary habits and conduct, and whether he has undergone any, and what, previous treatment, or has been subjected to personal restraint; also the medicines that have been administered, and the other remedies that have been employed.

By the increased facilities afforded for pathological investigations by resident pathologists and the construction of well-appointed laboratories, by the encouragement of operative treatment, where insanity can be traced to traumatic cause, by the recognition of the probably toxic origin of certain forms of insanity and the value of antitoxic treatment, and in many other ways, the asylum physician is endeavouring to prove himself worthy of the confidence of his professional brethren in general practice, in order that the ties which unite him to them may be drawn closer for the scientific advancement of psychological medicine and the benefit of the community at large.

ON SNEEZING.*

BY GREVILLE MACDONALD, M.D.

I HAVE been asked to contribute a paper on the subject of "sneezing," a subject which perhaps, at first sight, may appear to afford matter for amusement, if not ridicule, rather than scientific discussion.

But my object in doing so is twofold: firstly, that I have good reason for thinking that the physiology of sneezing has never been described correctly; and secondly, that it will give me good excuse for making certain remarks upon the relation of specialism to general medical knowledge.

It is commonly believed that the effort of sneezing is a spasmodic attempt to extrude irritating substances which have reached the nasal mucous membrane; but if for a moment we reflect upon the actual condition of affairs during the act, it will be quite clear that we do not, by sneezing, directly drive irritating particles from the nose. As a matter of fact, sneezing consists essentially in a spasmodic closure of all the passages by which the air may be expelled from the lungs, not the least amongst these being the sphincter-like contraction of the superior constrictor of the pharynx and levators of the palate. Briefly the process is as follows:

It would appear that on the entrance of an irritating particle into the nose, the primary object of the reflex phenomenon is to increase the flow of mucus, not only for the sake of interposing some non-irritating substance between the sensitive membrane and the foreign particle, but even more for the purpose of washing it away. This increased flow is produced by a double mechanism. I believe in the first place there is the supply of more blood and the stimulation of the secreting cells through nervous irritation of the Schneiderian; and, in the second, there is the increased intra-vascular pressure from over-filling of the venous sinuses which compose the erectile tissue covering the inferior turbinated bones. This pressure in the venous sinuses is necessarily enormously increased by the convulsive expiratory act comprised in sneezing, which is briefly this: violent contraction of the diaphragm and other muscles, together with a closing of the glottis, of the post-nasal space, and of the buccal orifices by the approximation of the tongue firmly to the teeth and hard palate. In fact, every possible movement is thrown into action to prevent the exit of air from the larynx, mouth, and nose. The immediate consequence of this, of course, is increase of the intra-thoracic pressure, which necessarily augments intra-vascular tension, especially in the veins, and hence in the venous sinuses of the nose. It may, perhaps, be objected to this argument that an artificial attempt at sneezing in the manner I have just described would not immediately produce a flow of mucus from the nose; and I grant the objection. But it is now generally admitted that for all gland action there are two distinct actions called into play, the increased blood-supply, or vascular tension, and the nervous stimulation; and these two we can scarcely imitate artificially in the case of sneezing, for no sooner is the irritation of the nose sufficient to supply the nervous stimulus than spasmodic increase of the intra-thoracic pressure is spontaneously superadded.

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* Read before the K. C. Medical Society.

I have often had opportunity for observing the nasal mucous membrane immediately before and after an act of involuntary sneezing, and I can assure you that by the act not only is the mucous membrane suffused with blood, but we have perceptibly increased swelling of the inferior turbinated bodies. Moreover I have watched the act critically hundreds of times, and I have never observed a patient sneezing *through* the nose. As a matter of fact, during the violent expiratory act the first orifice to give way is the buccal; the first opening is made by withdrawing the tongue from the hard palate, the second by opening the glottis. One may ask why, to produce the requisite degree of intra-thoracic pressure, it should be necessary to close the posterior nares and mouth as well as the glottis. As a matter of fact, the glottis is very ill adapted for preventing expiration. The wedge-like shape of the glottis, the point of the wedge being upwards and formed by the approximation of the cords, is obviously conducive towards the forcing apart of these ligaments, and we always find that in abductor paralysis of the cords expiration is infinitely easier than inspiration. Hence the glottis being scarcely strong enough to prevent expiration, we adopt the further means of maintaining the intra-thoracic pressure by closing mouth and nose.

Physiologically, sneezing is generally welcome enough. We like a good sneeze; we feel better after it, the nose is more comfortable; the increased flow of mucus depletes, one may say, the turbid spongy bodies, thus reducing their size, and enlarging the respiratory passages of the inferior meatus. This freedom from previous difficulty is always accompanied by a sensation of increased well-being, and, consequently, after a good sneeze many of us feel ourselves much more disposed to intellectual activity; and no doubt it is for some such reasons as these that snuff-taking, and perhaps even tobacco-smoking, is so agreeable a pastime.

I said at the outset of my remarks that my subject was a good one for pointing out certain relations which specialism bears to general medicine, and now I want to make good my claim; and in doing so I shall be induced to point out some of the graver dangers of devoting oneself to an exclusive line of study and work. In these patients who sneeze we have two important factors to deal with, the general and the local. The general condition is always present to a greater or less degree, and briefly we may give it the fashionable term of *neurotic*. The local condition depends upon some condition in the nose, which, though perhaps not actually pathological, we must yet consider a departure from the normal. Now, so far are the two essential to the production of the symptoms that we may have a pronounced degree of the neurotic conditions without necessarily finding our patient is particularly sensitive as to his nose; while, on the other hand, we may find the most grave pathological or structural abnormalities in the nose itself without necessarily producing the symptom of sneezing, provided the patient is not of the neurotic temperament.

Now I should like to state, if I am not trespassing upon grounds which are not my own, something of what I mean by the neurotic temperament. We might put various other names upon it; it is so ill-defined, so common in this day, and so closely associated with what we might call mental or even psychical peculiarities,—indeed, the precise point at which the neurotic becomes pathological is very difficult to determine. Your neurotic patient has not only a sensitive nose—although he has not necessarily that,—but he is generally of a hyperæsthetic temperament. He feels everything acutely; the smallest departures from the normal will to him be causes of grave discomfort, if not of incapacity; he feels pain excessively, although he is by no means necessarily a coward. Then these patients are often, perhaps generally, more or less of a sensitive mental organisation. They *feel*, intellectually, perhaps more forcibly than they think. They are people who are always ready to give sympathy, and, correspondingly, are somewhat eager to demand sympathy; and here we see the danger which the neurotic encounters in the possibility of his temperament degenerating into such forms of mental disease as are comprised under the terms *neurasthenia* and *hysteria*. They are quick, I say, and sensitive to feel; hence I shall cause no surprise in asserting that our neurotic patients are more or less of an artistic temperament. They are poetical or musical, or have a great love for the fine arts. They are not necessarily good executants, although, of course, there is no reason why they should not be, but they are essentially artistic in their feelings. I believe that all musicians are more or less neurotic, all actors are neurotic, and certainly a large number, perhaps the majority, of minor poets are emphatically of the neurotic temperament. But I will even go a step further in my definition of the neurotic. I believe he is conscientious. I believe that his tendencies being to sympathise with his fellow-creatures, he has the corresponding reluctance to do anything which is antagonistic to the interests of his fellow-man. But I do not wish these generalisations of mine to be taken for more than they are worth. I do not for a moment mean to say that if a man came to me for a small loan, and at the same time was seized with a violent attack of sneezing, I should necessarily trust him! I have not observed that my sneezing patients are any more disposed to part with their fees than others who do not sneeze; but taking the matter from a wide point of view, considering men perhaps rather than patients, I am inclined to think that what we are pleased to call the conscience, like other parts of man's sensory nature, is in these individuals disposed to be oversensitive rather than obtuse. Well, then, given this curious over-sensitive nature, it is perfectly intelligible that an irritant in the nose of such a one may produce violent sneezing, while in the nose of a more phlegmatic individual no symptoms whatever would be produced. And not only do we find this general hyperæsthesia, but we find in these patients curious idiosyncrasies which expose them to one or another source of attack from which the majority of mankind is free. I have a patient who tells me that if a cat comes into the room, whether she sees it or not, she begins to sneeze; something emanating from that cat's back which produces an irritation of the Schneiderian. We all know how prone to sneeze certain individuals are during the haytime, or rather when the common rye-grass is in bloom, the pollen of which, in a perfectly normal condition of the nose and nervous system would give rise to no inconvenience whatever. But given your idiosyncrasy and the something wrong in the nose, and the most violent symptoms may be produced and continue day after day for some six weeks in every year of the individual's life. Some persons are not sensitive to grass, but sneeze violently in the presence of roses; and so closely associated is the mental with the physical condition in these cases, that a patient sensitive to roses may occasionally be induced to sneeze spasmodically on the presentation to her of an artificial flower. But this is only a matter of hearsay; I have never myself come across a case exactly like it. Less commonly on the moors the heather will make some suffer when they go grouse-shooting. In Australia there is another form of pollen flourishing in the spring, about September, and covering the hills round Adelaide to the height of some thousand feet or so. I believe it is known as the "Cape weed." Professor Bottomley has most kindly examined a specimen for me, and tells me it is *Cryptostemma calendulacea.* A lady told me a short time ago that the white covering of the carriages and the white dresses of the ladies at this season would be covered with a thick layer of yellow pollen, and that most of the inhabitants of Adelaide spend their time in sneezing so long as this composite flower is in blossom!

Another curious idiosyncrasy I have found a few patients complain of is that they cannot go near a horse. One tells me that if he pats a horse with his hand, and an hour or two afterwards inadvertently puts his hand to his face, he is immediately seized with a violent paroxysm. He can drive one horse with comfort, but tandem or four-in-hand will soon cause such sneezing and running from the eyes as to make it impossible. This patient also tells me that he has a cousin in America who suffers in the same way. He takes his pleasure in shooting, but as his preserves are some miles away from his house he is compelled to drive; yet he will be sneezing violently all the way, and ultimately becomes so exhausted that his shooting is the poorest of sport—except perhaps to the birds! But now he has adopted a device by which he overcomes the difficulty. He always carries in his buggy alongside of himself a large watering-can with a big rose, and by watering the back of his horse occasionally as he goes along he wards off his enemy! I suggested to my patient that he should adopt the same plan in the park, and that then he perhaps would be able to drive four-in-hand with comfort, provided he had a garden syringe and kept a continual spray of water playing upon his horses' backs! But patients are curiously reluctant to take one's advice sometimes, and so far as I know he has not benefited by my thoughtful suggestion.

Now a few words on the local conditions. Practically we may say that any departure from the normal in the way of hypertrophic or hyperplastic encroachment upon the lumen of the fossæ may increase the sensitiveness of the whole mucosa. Now many such conditions which we constantly encounter are not in themselves necessarily pathological. We often find the most curious distortions of the septum. We find it twisted about from side to side and extraordinarily hypertrophied, and this from no actual disease, but merely the result of malformation, faulty development, or traumatism. Or, again, we may have various kinds and degrees of inflammatory hyperplasia, such as polypi, hypertrophy of the erectile tissue, and so on. But amongst such things any obstruction to the free passage of air along the inferior meatus is more important, in my experience, than such developments in the upper regions. But besides these actual obstructions we often find a very curious condition of the mucous membrane, more especially in cases where our patient complains of daily attacks of sneezing all the year round and independently of any special form of irritant. She—and these patients are generally women—wakes every morning with sneezing, and will continue for a greater or less number of hours according to the severity of the case. Here we find especially a curious pale swelling of the whole of the mucosa, so that it looks grey and œdematous rather than hyperæmic and substantial; and if we apply to the mucous membrane a 5 per cent. solution of cocaine, we speedily reduce the apparent size of the swollen regions and induce an immediate relief to the distressing symptoms.

And now I can point to the moral I promised with regard to the dangers of specialism.

I think in all special lines of practice we have to guard most carefully against over-estimating the importance of abnormalities which may appear to us, in the fulness of our knowledge, necessarily to require treatment. I think I shall not be saying too much if I assert that within certain obvious limits we need never trouble ourselves about the objective condition unless there are corresponding and unequivocal symptoms. At least I will assert this as a safe rule, with a few exceptions, so far as regards my own speciality. What I mean is this, that the nasal cavities may often present extraordinary departures from the strictly normal, without necessarily interfering with the patient's health or comfort; but, on the other hand, in a neurotic individual we may often have to discover minute departures from the normal, the treatment of which will entirely cure very serious symptoms, which abnormalities, however, we may readily overlook, so insignificant do they appear upon a casual examination.

I could dwell at length upon the diseases of which sneezing is a prominent symptom had I the space, but I think it will perhaps be more satisfactory if I say a word or two as to how far we are able to treat the condition; and so good on the whole is the prognosis for all conditions of the nose where sneezing is the prominent symptom, that we can in nearly all cases hope to relieve, if not cure, our patient. Briefly, the treatment consists in restoring as far as possible the nasal passages to their normal condition. Where we have obstructions which can be removed by surgical measures we operate; and where we have a swollen œdematous condition of the mucous membrane, such as I have described, we treat it successfully by judicious applications of the electric cautery or other destructive agent. Suffice it to say in this place, that wherever in a sneezing case we find marked objective disease we may give a highly favorable prognosis.

ON THE
PRINCIPLE OF SELECTION AS APPLIED
TO THE
ADMINISTRATION OF ANÆSTHETICS.

By J. FREDERICK W. SILK, M.D.

In choosing an anæsthetic it has usually been the custom to select either chloroform or ether, in accordance with the personal prejudices of the administrator, or of the operating surgeon, in favour of one or other of these drugs, and with but little regard to the nature of the case, or the idiosyncrasies of the patient. This custom has partly arisen in consequence of the keen controversies as to the respective merits of these two substances, controversies which have, I think, rather tended to obscure that other aspect of the question which takes into account the particular requirements of the individual case.

In the administration of a drug, or in the performance of an operation, the measure of our success is usually proportionate to the care taken in adapting the means to the end; colocynth is not always the best purgative, nor is it always advisable to amputate the leg by Teale's method. For similar reasons, in the administration of anæsthetics, the best results will be obtained by carefully selecting the anæsthetic and the method of its administration in accordance with the attendant circumstances; for even if it is held that many patients take a certain anæsthetic in precisely the same way, and that in many instances the attendant circumstances are precisely similar, at any rate it cannot be denied that this is not always so, and that cases may be arranged in groups between which the differences are very marked. Our knowledge upon this question of "the selection of anæsthetics" is as yet imperfect, and, very naturally, many differences of opinion and practice exist. In the present paper I do not propose to do more than indicate what is my own practice in the matter.

Chloroform and ether are of course the substances most commonly employed in surgical work; nitrous oxide is less frequently used,—less frequently, in fact, than I think it ought to be, and mixtures of chloroform and ether may be represented by the well-known A. C. E. If to this list we add such substances as methylene, nitrous oxide and oxygen, amylene, and other anæsthetics whose reputations are even less firmly established, it will be seen at once that our choice is by no means so restricted as is generally supposed. As an example of this I may instance the fact that, in analysing the 6000 and odd cases recorded in my own private notebooks, I find that I have had to classify the "anæsthetic used" under no less than twenty-four separate headings, including of course the different combinations of the drugs above mentioned.

For practical purposes, then, the list of available anæsthetics, arranged in the ascending order of their relative strength, may be taken as follows, viz.:

1. *Nitrous oxide.*—Under this head I would include not only nitrous oxide itself, but also that use of nitrous oxide and ether known as "gas with a whiff of ether," or, as I should prefer to term it, "etherised nitrous oxide," in which the action of the nitrous oxide is intensified and prolonged by the addition of small quantities of ether vapour.

2. *Ether.*—Under this head may be included the so-called "gas and ether method," or, as I should prefer to term it, "nitrogenised ether," in which the nitrous oxide is used as a vehicle for introducing the ether into the lungs.

3. *Mixtures containing chloroform,* as typified by the A. C. E. mixture.—Under this head I would include such substances as bichloride of methylene, which, if not chemically, at any rate clinically act precisely like mixtures of chloroform and alcohol.

4. *Chloroform,* which I look upon as one of the most valuable of the anæsthetics known to us, but at the same time it cannot be denied that, as it is the most powerful of anæsthetics, so its use is attended with the greatest amount of risk, and, therefore, that it requires the greatest care in its administration.

In selecting an anæsthetic from this list the only point which we really have to consider is, of course, What is to the best interests of the patient? Primarily, of course, "safety" is the chief point, but secondarily we must take into account the comfort and convenience not only of the patient but also of the operator. The comfort and convenience of the operator is really closely allied to or inseparable from the interests of the patient, for we know from experience that nothing is more likely to embarrass the operator, or lead to bad work, than mal-administration of the anæsthetic. The extent to which various anæsthetists consider themselves justified in permitting these secondary considerations to encroach upon the prime consideration of safety, accounts for the differences of opinion and practice to which I have already alluded. In my own practice, while adopting the generally accepted principle of not giving a powerful anæsthetic if a feebler one will give as good results, I allow myself considerable latitude, and, I believe, admit of more exceptions than is usual. Preferring the anæsthetics in the order already given, I consider each case presented to me from the following points of view, viz.—

Probable duration of the operation.
Position of the patient.
Condition of the patient as to age, physical state, &c.
Nature of the operation.
Convenience of the surgeon.

What I have to say under these different headings refers mainly to the *induction* of anæsthesia, not only because I think that this is the most important part of the process, but also because I believe that in the majority of cases, however the anæsthesia be induced, the condition may be *maintained* by the subsequent use of ether. I would explain, too, that although I almost invariably use the "gas and ether method," to induce anæsthesia by means of ether, yet my remarks apply equally to the use of ether alone.

Probable duration of the operation.—I consider this point first of all, because it is usually the time-limit alone which prevents us giving nitrous oxide itself or "gas with a whiff of ether" in nearly every case. This time-limit I would put at about five minutes, including induction. At first sight it may be objected that but little surgery can be done in this short space of time, but I would point out that in the hands of the dentist the time often suffices for the extraction of half a dozen teeth, and that I have myself seen it ample for such minor-surgery as moving stiff joints, opening abscesses, scraping sinuses, removing small tarsal and sebaceous cysts, removing spurs of bone from the nasal septum, scraping the post-nasal space with the finger-nail, &c. For small cases such as these I should not think that I was in any way justified in exposing the patient to the additional risk of a more powerful anæsthetic. In cases of longer duration than this my choice is determined by subsequent considerations. I may perhaps mention, however, that if anæsthesia has been induced by means of the A. C. E. or chloroform, I usually commence the gradual administration of ether at the end of about the first half-hour if I do not see the prospect of the operation being concluded in another quarter of an hour,—provided, of course, that I do not see any objection to making this alteration.

Position of the patient.—I give this consideration a prominent place on my list because the sitting position at once precludes the use of chloroform, or of mixtures containing that drug. I do not, however, object to give chloroform, if otherwise desirable, in that semi-recumbent position usually adopted in cranial surgery, *i. e.* with the legs supported horizontally and the body raised about forty-five degrees.

Condition of the patient.—This, of course, is, from my point of view, the most important of all considerations, and must be dealt with in detail.

(*a*) *Sex.*—Females appear to take all anæsthetics better than males. Beyond this I have not much to say under this head, except, perhaps, that I see no reason to depart from the old-established practice of using chloroform in parturition when an anæsthetic is called for. The immunity from accident enjoyed by women under these conditions may be partly the result of the smallness of the dose, and partly, perhaps, on account of the more vigorous heart-action.

(*b*) *Age.*—Except for the difficulty in adjusting the face-piece, I know of no real objection to the use of nitrous oxide in the youngest of children, if the probable duration of the operation permits. If the time-limit already alluded to is likely to be exceeded, I prefer, in children under about three years of age, to induce and maintain anæsthesia by means of chloroform, because at that time of life the mucous membranes are very delicate, and particularly susceptible to the irritating effects of ether vapour. Between the ages of three and about twelve, unless the operation is a long one, I usually give the A. C. E. mixture all through, gradually increasing the relative amount of ether as the operation proceeds. In this connection I may perhaps express my belief, that the safety of chloroform in children has been much over-estimated, as anyone looking carefully into the matter may readily convince himself. The truth probably is, that the death of a child under chloroform creates less sensation than the death of a man; children, too, are more quickly anæsthetised, their struggles more easily restrained, and should they, by chance, get an overdose, they are more likely to yield to the efforts made to resuscitate them.

Between the ages of twelve and sixty I prefer to give ether whenever possible, and especially if the operation is at all likely to be a prolonged one, causing much shock, or requiring profound anæsthesia—as, for instance, in operations about the rectum, perinæum, vagina, &c. In adults over sixty the tissue degenerations have usually commenced, and I think, therefore, that, for induction at any rate, these patients do better with the A. C. E. Such patients, in addition to their thickened or hardened arteries, are often more or less emphysematous and bronchitic, so that ether, unless freely diluted with air, is apt to be resented. It should be remembered, too, that the saying that "a man is as old as his arteries" is essentially true in respect to anæsthetics, and one must therefore judge of age less by the calendar than by the feel of the pulse.

Excluding other considerations, therefore, my practice in respect to age may be summarised thus :

Under 3 . . .	Induce and maintain with chloroform.
3 to 12 . . .	Induce with A. C. E., gradually add ether.
12 to 60 . . .	Induce and maintain with ether.
Over 60 . . .	Induce with A. C. E., try to maintain with ether.

(*c*) *Previous history and habits.*—Patients with a history of recent or repeated attacks of pulmonary trouble do better, I think, with A. C. E., or even, if the history is a very recent one, with chloroform alone. With regard to alcoholics, I should say that as a general rule, and especially in hospital patients, they exhibit early signs of tissue degeneration, and these signs are of more importance to us as anæsthetists than the mere fact of their alcoholism. Alcoholics take all anæsthetics about equally badly—in the sense, that is, of struggling violently.

(*d*) *Physical state.*—Fat, plethoric individuals are to my mind the most troublesome of all the cases that we have to deal with, as both their respiratory and cardiac functions are interfered with. On the whole I have found that in these patients it is better to commence with the A. C. E. mixture, and substitute ether, plentifully diluted with air, at an early stage.

Theoretically, at any rate, gross cerebral lesions call for the use of chloroform, as with this substance there is less vascular congestion; I cannot say, however, that I know of any recorded cases in which the use of ether has given rise to trouble. In actual or very recent disease of the lung it is, I think, better to use chloroform, and in marked emphysema I prefer to commence with the A. C. E., gradually adding more and more ether as the case progresses. If, in valvular disease of the heart, there are any indications of failure in the compensatory action, I prefer to give the A. C. E., or even, in advanced cases, chloroform alone. My objections to the use of ether in these cases are, that not only is the heart unduly excited, but if there is any increase in the amount of mucus thrown out, an additional strain is thrown upon the already feeble heart muscle. On the other hand, there are, no doubt, a large number of cases in which the compensation is perfect, and I have notes of many such cases which have taken ether quite satisfactorily. If one is in any doubt as to the amount of compensation, it is, I think, best to give the A. C. E. Vascular degenerations in the shape of atheroma, &c., are of course usually associated with other marked tissue changes, such as emphysema, and the existence of a brittle artery in such cases is another reason for employing A. C. E. or chloroform. For the same reason, *i. e.* the increase in the intra-vascular blood-pressure, it is usually held that ether should not be given in advanced renal disease, and I have certainly heard of cases in which its use has been followed by hæmaturia.

As far, then, as the physical condition of the patient is alone concerned, my practice may be summarised as follows:

The fat and plethoric .	Induce with A. C. E.
Gross cerebral lesions .	Chloroform all through.
Acute or very recent lung trouble	Chloroform all through.
Emphysema and chronic lung trouble	Induce with A. C. E.
Insufficiently compensated cardiac	A. C. E. or chloroform all through.
Fully compensated cardiac disease	If in doubt A. C. E., otherwise ether.
Vascular degenerations .	Induce with A. C. E.
Renal disease	A. C. E. all through.

In other cases ether.

(*e*) *Nature of the operation.*—To many people the prospect of an operation is a source of anxiety for days or even weeks beforehand; for this reason alone, if for no other, I think one is justified in running a slight additional risk with the anæsthetic if, by so doing, we can in any way facilitate the work of the surgeon, and so save the patient from having to go through the ordeal a second time. At any rate, I should in many cases take it as a reflection upon myself to be told, that an operation could not be properly completed because of some trouble with the anæsthetic, although of course it must be admitted that in some instances such trouble is quite unavoidable.

In intra-cranial operations I prefer to use chloroform, because the dilatation of the vessels which results from the use of ether is apt to give rise to excessive hæmorrhage, which may obscure the view of the surgeon. I may mention, too, that these are the only cases in which I advise the prior injection of morphia, because it seems probable that this tends to render the cerebral substance still more anæmic.

In short operations (10—12 min.) about the nose and mouth in adults, and when the increased hæmorrhage is not objected to, a single full dose of ether will often suffice, but the inhalation must be kept up for fifteen or twenty minutes before the surgeon commences his manipulations. (In cases of much shorter duration I have found nitrous oxide and oxygen very useful.) In somewhat longer operations in these regions, and in children, I prefer to commence with A. C. E., and continue if necessary with chloroform.

In operations about the head and neck generally, I usually commence with the A. C. E. in order to avoid the venous engorgement; the anæsthesia may be maintained in long operations by means of ether.

In abdominal operations it is sometimes said that the use of chloroform is particularly called for, or at any rate that a mixture containing that drug should be used, and it is for such cases as these that methylene is particularly advised. For my own part I see no objection to the use of ether,—as far, at any rate, as the patient is concerned; ovarian cases take ether remarkably well, and taking the precaution to keep the patient deeply under the whole time, I have seldom had any difficulty in other abdominal cases.

(*f*) *Wishes of the surgeon.*—In many cases, and particularly if a specialist is employed, the selection of the anæsthetic is left entirely in the hands of the administrator. This of course is as it should be; but, on the other hand, there are some operators who fancy that their work is impeded or their attention distracted if a particular drug is used. I think, therefore, that it is better that the matter should be discussed beforehand with the surgeon, and that the anæsthetist should not assume too independent a position, but should look upon himself rather as "co-operating" with the surgeon in the best interests of the patient.

In what I have written above I have endeavoured to give expression to the routine methods which I have gradually adopted in my own practice, and I may perhaps make my meaning a little clearer if I attempt to summarise them in a slightly different form.

I give nitrous oxide or etherised nitrous oxide in cases in which the operation is not likely to last more than a few minutes. In longer cases my first choice would be for ether, especially if the patient is an adult, or is about to be subjected to an operation involving much shock or requiring a profound degree of anæsthesia. The many exceptions to which I have alluded refer mostly to the *induction* as distinguished from the *maintenance* of anæsthesia; however induced, there are really very few cases indeed to whom I do not administer more or less ether before the operation is concluded. When ether is considered inappropriate, my next choice is for the A. C. E. mixture given by the semi-open method, *i. e.* in a perforated, loosely fitting mask. I consider it best to induce anæsthesia with this substance in children between three and twelve; in adults over sixty; in the fat and plethoric; in emphysema; in some heart cases; in atheroma; in renal disease; in operations about the head and neck; and in many operations about the nose, mouth, and throat. When it is desirable to maintain the anæsthesia by means of ether, this may be done perfectly well in the same inhaler, and the use of the bag inhaler, to which many people object, is thus avoided. Finally, I should reserve the use of pure chloroform for women in labour; children under three; gross cerebral lesions; acute lung trouble; and to maintain the anæsthesia in operations about the nose, throat, and mouth.

ON THE

ARTIFICIAL MATURATION OF IMMATURE SENILE CATARACT BY TRITURATION,

AFTER THE METHOD OF FÖRSTER.

By MALCOLM M. McHARDY, F.R.C.S.Edin.

The artificial maturation of immature senile cataract by trituration, after the method of Förster, which has been here practised very critically, appears the most noteworthy work of the ophthalmic department of King's College Hospital during the past ten years. The method was first practised quite tentatively, next applied and watched to test first its safety, then the range of its applicability, next to estimate its comparative utility, and latterly with the opportunity to judge as to its advantages.

The method critically practised during nearly ten years.

The practice gains increasing favour with me, the more I see of its results at my hands.

In May, 1890, I communicated my views of the proceeding as they had developed with some five years' practice. The communication I then made has never been published to my knowledge, though a version of some discussion which followed, and a subsequent paper concerning the case of "Brenton M," erroneously disparaging to my practice of the proceeding I advocated, did appear. Likewise a reference to my challenge of the inaccuracies in that paper and their withdrawal was published in Vols. X and XI of the 'Transactions of the Ophthalmological Society of the United Kingdom,' but this is not the place to review that Society or its 'Transactions.'

This preface will serve to explain, to those who then heard me, why I am now reiterating much that I said in May, 1890. My subsequent experience entirely confirms me in the views I then supported.

Ten years' experience of procedure has proved its value.

Some ten years' experience with the artificial ripening of immature senile cataracts, which operation I practise with increasing frequency and confidence, has convinced me of the truth of the following proposition, for which I claim attention, as I believe its general and careful recognition by skilled ophthalmic operators would enable them to far more usefully serve their patients, and to promptly rescue many from those dreary months or years of semi-darkness and incapacitating blindness, the dread and anxiety incidental to which have heretofore too often heavily overcast and wasted what might otherwise have been the bright and useful evening of life.

Artificial ripening rendered safe and sure without prejudice to the ultimate excellence of result from extraction of cataract.

Complete ripening of immature senile cataracts may be safely and almost certainly secured in from three days to eight weeks by preliminary iridectomy, with trituration of the lens, through the cornea and pupil, done with judgment, experience, and care; and the ultimate results, surgical and visual, of extraction operations in such cases are quite equal to the results of similar operations for senile cataracts which have been allowed to fully mature spontaneously. Further, the removal of such artificially matured cataracts is entirely free from those risks, drawbacks, and often impaired ultimate results, which follow from the removal of immature senile cataracts. A large debt is due to Förster for the initiation of this procedure. A corresponding responsibility attaches to such skilled operators as may, by longer omitting to familiarise and perfect themselves in its practice, assist to rob certain fellow-creatures of an important amount of useful vision and peace of mind.

Delayed publication no unmixed evil.

The incidental delay which has occurred in the publication of my experience with the matter I feel to be no unmixed evil. That, after some ten years' experience with the method, I should advocate it as warmly as I did nearly five years ago, is important additional testimony in its favour, for all of us are disposed to be enthusiastic for or against any *new* method which we try carefully. Indeed, I think it was Sir James Paget who sagely remarked that almost any *new* form of local treatment, which was not absolutely injurious in itself, was likely, in its early application, to be followed by exceptionally favourable results. This, however, by no means necessarily because of the superiority of the *new* treatment, but because of the superior attention and care which was ensured to those cases which were the subjects for the clinical study of such *new* method.

Memoranda of my first twenty-five selected cases, in 1884 and 1885, and of a subsequent hundred consecutive cases in 1888—1890, emphasise how the safety and success of the method grew with my experience in its application.

Mr. Cargill's independent record of my practice in dealing with senile cataract during 1893, and the first half of 1894, indicate the extent to which, and the results with which, I now employ the method in my treatment of senile cataract.

Exceedingly scant and tardy trial of the method has been accorded by others, in London and in the United Kingdom generally.

The following letter from an esteemed and much appreciated *confrère* indicates the very tardy and limited extent to which the procedure had been developed in this country, outside of King's College Hospital and my own practice as recently as 1890. I quote it and my reply, as they well represent the opposite views which were at that date held on the subject by representative ophthalmologists in this country. Moreover, my reply explains the views I held on the subject in 1890, and which I still hold, and furnishes such an explanation as is being repeatedly demanded. Mr. Pridgin Teale, on October 27th, 1890, wrote authorising the publication of his name with the following letter.

"38, Cookridge Street, Leeds;
"*March 3rd*, 1890.

Letter from Mr. Teale, disparaging artificial ripening in a case for which author entertained it.

"Dear Mr. McHardy,

"Mr. S— called to-day to ask my opinion about his eyes, and more especially in reference to the question whether I should advise a preliminary maturation by operation of the incipient cataract in the left eye.

"I must say that I do not see any reason for such a course at present. The results of artificial maturation of cataract are not as yet equal, I doubt whether they are nearly equal, to the results of operation on fully mature cataracts.

"Such being my view, the question arises whether there is any reason in Mr. S—'s case for adopting a course involving extra risk of a first-rate result. I think not,—at present, at any rate. The vision of the right eye is still good, and adequate for all practical purposes, and likely to remain so for some time to come. The signs of the cataract in the left point to the probability of fairly rapid development, and even of the likelihood of development taking place with increasing rapidity.

"He may well wait until advancing cataract begins to embarrass the right eye. If, then, the left is not sufficiently advanced for a safe operation, the question of artificial maturation should be revived.

"Believe me,
"Yours truly,
(Signed) "E. Pridgin Teale."

Condition of case referred to in annexed correspondence.

The patient, Mr. S—, referred to in the above letter was a man from fifty to sixty years of age, taking a leading position as a tradesman in an important provincial town, actively employed in his tradesman's duties, which are responsible, and with vision in his better eye reduced to $\frac{6}{8}$; with a slight recently developed myopia, connected, I think, with some change of the lens in that eye. In the fellow-eye he had incipient central cataract, but such a cataract and so central that already, at a date preceding the date of this letter (March 3rd), the vision of his worse eye was reduced to less than $\frac{6}{60}$. My reply was as follows:

"5, Savile Row, London, W.;
"*March 6th*, 1890.

"Dear Mr. Teale,

"Thank you very much for the trouble you kindly took in writing so fully your views regarding the case of Mr. S—, and I am the more indebted for your letter, as it renders apparent to all the good-heartedness and *bona fides* of the advice you gave, though you will excuse my saying that I needed no evidence thereof.

Letter from author, stating his grounds for entertaining artificial ripening of immature senile cataract in a case for which Mr. Teale disparaged such treatment.

"Now, then, we differ absolutely as to the advice we give in the case of Mr. S—, or in similar cases. Assuming that my advice is as *bonâ fide* as I know yours to be, the explanation of our difference must be found in our individual experience, and is explained by the following two sentences.

"You say, 'the results of artificial maturation of cataract are as yet not equal, I doubt whether they are nearly equal, to the results of operation on fully maturated cataracts. Such being my view, the question arises whether there is any reason in Mr. S—'s case for adopting a course involving extra risk of a first-rate result.'

"I say, my experience for upwards of five years past has shown the most satisfactory results from artificial maturation of immature cataracts, done with judgment, experience, and care, by trituration with preliminary iridectomy, and the ultimate results in such cases are quite equal to the results of operation on senile cataracts which have fully matured in their ordinary course, and are entirely free from the risks, drawbacks, and often impaired ultimate results which follow from the removal of but imperfectly matured senile cataracts.

"I have so frequently referred in public to my eminently happy experience in treating senile cataracts as I proposed to do with Mr. S—'s, and as I am now doing every week of my life, that I have, perhaps through false modesty, hesitated to intrude a paper on the subject. However, if I may use your letter as the text from which to preach, I think I must forthwith start in full earnest preaching that which, experience teaches me, saves so many useful men from becoming temporarily useless, hipped, and ultimately recovering their vision only to find their places in large measure occupied. You may be glad to know that latterly, with increasing experience of the manipulation, &c., I have had no unhappy experience. With all I have done in the last five, six, or seven years, I have lost no eye, I have lost the vision of no eye, and I have had scarcely anything but the most gratifying successes as a result from the treatment of immature senile cataracts by preliminary iridectomy and trituration, followed by modified linear extraction. Only yesterday one such case came in (Professor ——, of —— College) with the vision of his left eye better than $\frac{6}{6}$, the right eye useless, but with its cataract still immature, though the left cataract was treated by preliminary iridectomy and trituration in March, and the cataract removed in August, 1888; and in March, 1889, I prescribed the necessary correcting lenses. I am now quite surprised when such operative treatment of senile cataract does not result in restoring to otherwise sound eyes at least $\frac{6}{12}$ of vision.

"Critchett at the last B. M. annual meeting expressed a wish that I should burst * on the subject, which so far appears to be pretty much my own in this island, and, though I have little time or inclination for such publicity, I suppose I must now do something of the kind. If you, as I am inclined to infer, have not yet thus treated many immature senile cataracts, and will not resent the suggestion, I shall be exceedingly happy to endeavour to accumulate a few cases for such treatment on such day as you may be able to give me due notice that you will be in town and graciously pleased to attend.

Experience and judgment essential for safe, satisfactory and successful practice of procedure.

"I feel in writing this that it sounds rather presumptuous, but I have learnt that scarcely any, if any, ophthalmic operation requires so much personal experience and judgment for its safe, satisfactory, and successful carrying through, as does this artificial maturation of immature senile cataracts by trituration.

"With kind regards,
"Yours very faithfully,
"MALCOLM M. MCHARDY."

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* By "burst," I meant make a public communication.

The letter embodies my views, and is one which I have written to many; I am only too glad to show the details of the manipulation I follow to such *confrères* as are able and inclined to fall in with the suggestion I offered Mr. Teale. My first experience of the method was not without its unpleasant side, which it is important should not be overlooked, though it is that which we are often least disposed to record. When I first began triturating immature cataracts, if my first and second cases had behaved like my fifth and sixth I probably should not have gone much further with the operation. My first twenty-five were rather picked cases. I wanted to give the operation a fair trial, and not a severe test. I wanted good cases that were not hampered by either diabetes, albuminuria, extreme age, asthma or bronchitis, insanity, or any of those concomitants which sometimes hinder the success of ocular surgery. I excluded all such cases at first. In one of these first twenty-five cases I found occasion to extract the lens immediately at the same sitting, and excellent vision resulted. At first it was my practice to have the instruments ready to clear out the lens if the necessity arose. As just now stated, such a necessity did arise on the fifth or seventh time I tried this artificial maturation by trituration. I believe I ruptured the capsule of the lens. I am not sure what I did do, but this I know,—whereas the eye was all right before, during my operation a bead of vitreous humour became apparent in the lips of the wound. I did not feel happy about the case, so immediately increased my initial section, and guiding back the presenting vitreous, inserted my very wide, thin, Pagenstecher's spoon. It is widened, and it takes the whole lens in without rubbing the edges off. I took the lens out, and the case did exceedingly well. That is the only instance in my practice of this operation, which I am doing more and more frequently, when I have had to remove the cataract at a time when I intended only to mature its opacity,—I mean at the same sitting. More recently, I have had to remove a lens on the next day after the trituration, but I shall refer to that presently.

Author invites confrères to witness his practice of the procedure.

Unpleasant early experience with the procedure.

Earliest experience gained with picked cases.

Immediate extraction of the cataract proved needful in one early case of this artificial ripening.

This premature extraction of the cataract afforded an excellent result.

In only seven out of the first twenty-five cases was I unsuccessful in completely ripening the cataract. That is

At first complete ripening did not result invariably; iritis sometimes ensued, and prolapse of vitreous humour occurred too frequently at time of extraction.

to say, in 28 per cent. of my earliest cases I failed to accomplish the object I had in view. Out of these first twenty-five cases three, or 8 per cent., had iritis, and some had nasty synechiæ; seven, or 28 per cent., had subsequent loss of vitreous at the extraction operation. (28 per cent. of my cataract extraction operations do not lose vitreous.) I do not think that I see vitreous in 2 per cent. of my extractions of cataract. Mr. Carless, who used to assist me at that time, once said, "Oh, you will have loss of vitreous here; it is one of those cases you have been rubbing, and you always get loss of vitreous when you have been rubbing." Then he was right, for at first I frequently experienced a small loss of vitreous humour when extracting a cataract which I had artificially ripened by trituration, before having acquired proper experience of the procedure. My assistant said he was not in the habit of seeing vitreous under other circumstances, and he was about right.

Recent unpicked cases show far better results than were furnished by earlier picked cases.

In May, 1890, I said, the last one hundred consecutive cases have not been picked at all. In these one hundred cases I have had no immediate extraction rendered necessary. In 17 per cent. some iritis followed the trituration, and 5 per cent. had troublesome synechiæ. In two of these the synechiæ persisted, but did no harm. You will observe I get more iritis than I used to, but I am more successful with the synechiæ, and we come to these points,—practical ones, I opine. I now triturate much more freely and earlier than I did formerly. The amount of trituration, the amount of ripening that it is necessary to do, and that it is safe to do, has to be gauged very largely by the resistance which the cornea offers. A resisting cornea needs very considerable rubbing in order to affect the cataract sufficiently. Another cornea, which wrinkles and looks miserable, needs very little rubbing. I get more iritis now because increased experience has emboldened me to triturate much more efficiently than formerly. Less difficulty now arises from synechiæ, because, in these years, I have learned the value and superiority of a combination of cocaine with atropine in the breaking down of recent posterior synechiæ as contrasted with atropine alone, which used to be our sheet-anchor in these cases. I have had cases in which one

Experience emboldens author in application of procedure.

Cocaine and atropine superior to atropine alone in combating iritis.

has used atropine again and again, indeed, three times a day, three times over, and failed to break away a synechia; but when one has used atropine and cocaine in the same fashion the synechia has given way, and everything has gone smoothly. Latterly, in only 3 per cent. have I seen any vitreous humour when extracting senile cataracts which I have ripened by triturition. I now do the trituration much more generally, and with less provocation, than I did originally.

When a man who is any use to himself, or to others, comes to me with uncomplicated senile cataract, the vision of one eye reduced below $\frac{6}{60}$, and the other in any way impaired, I tell him at once, "There is some cataract. I cannot tell you how the mischief will progress; it may be months or it may be years before it will have ripened. Any man who pretends to know, from a single inspection, how long it will be before that cataract will ripen spontaneously is a fraud, so far as I can comprehend. I am certainly ignorant of any trustworthy means of gauging, by a single examination, the time which will elapse before a given immature senile cataract will have matured spontaneously. Before you find the vision of your good eye getting troublesome, at your convenience, and my convenience, we will arrange to artificially ripen the cataract without danger to that eye, which has now ceased to be useful for the purpose of your business. Having that cataract ripened will only remove you from your habitual avocations for a fortnight. Then, having ripened it, we can choose our own time, the best season of the year, the time most convenient to yourself, and to me, and then we will remove your cataract. You need not have any apprehension of being blind; you are not going to be blind at all during any part of the treatment. You will have your good eye good, long after your present useless eye is cured and almost ready for glasses. Then, when the useless eye has had its cataract removed, and can have glasses, then it will have a long time to "season," and to get ready for use, before it is called upon for the everyday necessities of life; and, again, you will also have the best opportunities of learning to accustom yourself to the undoubted inconvenience associated with the use of powerful glasses. You will

Example of conditions amidst which author advocates procedure.

Certain prognosis as to date of spontaneous ripening impossible.

Only brief seclusion necessitated by artificial ripening, which can be done at most convenient time.

Temporary blindness avoided.

Restored vision need not be hurried into use.

have to learn to focus and to dodge about with your elbows, and your arms, and your print, and your light, and can get experience in the use of glasses before you are called upon to earn your bread, or to do your business, with this repaired eye." I think much of this point. The man has no period of idleness, and he is able to look forward with complaisance to having the eye cured when it is convenient. He is saved a great deal of anxiety for himself and his friends, and he is saved from running around . . . . from one to another to know what he had better do with this eye which is going wrong.

Patient's anxieties and perplexities with reference to his cataract are minimised.

Author likes six weeks to elapse between artificial ripening and extraction of cataract.

I like six or eight weeks to elapse between the trituration and the subsequent extraction of the cataract.

In 100 consecutive unselected cases I have twice had to remove the cataract earlier than I had intended. One was a remarkably instructive case. It was a woman I shall not easily forget. She had already had a preliminary iridectomy done, eighteen months before, on her worse eye. She could barely find her way about with difficulty, though both cataracts, nuclear ones, were far from ripe, and, as I judged, not likely to mature spontaneously for several years. I used atropine to dilate the pupil of the worse eye, that which had been iridectomised and upon which I was going to operate. It is an important detail to have the eye well under atropine before trituration is practised. She complained of some incovenience from the atropine which had been applied overnight. I cannot say for certain whether I examined the vision and tension of the eye on the morning when I triturated; possibly I was too concerned in combating the filth in a miser's haunt. I operated in my usual way, utilising the already made iridectomy. In the evening she complained of considerable inconvenience. The next morning she said her night had been one of torment, and I found that she had acute glaucoma. Her glaucoma had not resulted from the operation *per se*. I had not ruptured her lens capsule. I believe her glaucoma was awakened by the atropine. It was very acute glaucoma. It raged successfully in spite of the small preliminary iridectomy which existed, and in spite of the small section for my trituration, she had indeed an acute glaucoma. I took out a knife, and I took out her cataract,

Well atropize the eye prior to trituration.

Once, acute glaucoma, excited by the use of atropine in connection with the ripening, necessitated an early extraction of cataract, and capital vision resulted.

and her eye then went on perfectly smoothly, and she now has capital vision.

The second instance in which I had to remove the lens sooner than I contemplated after trituration of the cataract happened as follows. I intended to do preliminary iridectomy on the right, and preliminary iridectomy with trituration on the left. Atropine was to have been used to one eye and not to the other; somehow there was a blunder about its use, and to correct this a further blunder was made by using eserine injudiciously. The old lady was in a terrible fright. I did a preliminary iridectomy in one eye, and I did a preliminary iridectomy with trituration in the other. She had acute iritis and she had some synechiæ. I used atropine, and I used atropine and cocaine freely, and her synechiæ gave way, and with that there happened what I never witnessed before, viz. the synechiæ tore away the capsule of the lens, and some of the soft matter of her cataract was visible through the tear. Six or seven days after the trituration operation I decided to extract the cataract. I took it out immediately, under ether, and she has done very nicely; V = $\frac{6}{9}$.

Out of last 100 cases of this procedure the second and last in which I extracted the cataract earlier than usual, yielded vision = $\frac{6}{9}$.

Certain of my unselected consecutive cases did go wrong, but not in consequence of the artificial ripening, I believe, for I judge they would have gone wrong at least just as much without it. Thus, in the one hundred cases referred to, one man had panophthalmitis. He was the victim of a most horrible ozæna, and no precautions that I could adopt succeeded in preventing infection of his eye wound.

In this 100 unselected cases of this artificial ripening, the sight of no eye has been lost as a consequence of the procedure.

Then there was a woman who did not lose her eye, did not get panophthalmitis, but an eye that is no use—it has no vision. She had a low form of iritis. She got her pupil drawn up. Repeated artificial pupils have all closed up again and again, so she has mere perception of light; she has plastic lymph, capsule and pupillary membrane all mixed up together, where one would like to secure a patent pupil.

These, out of the one hundred under consideration, are the only two absolutely *bonâ fide* cases that I have had of trituration of the lens followed by extraction, without sight being restored. I have another case, and this woman has lost the sight of both eyes after removal of cataract. She was an awkward patient. I have so far failed to ascertain with absolute certainty whether or not I triturated either of her lenses. I did not triturate both—that I do know. I am uncertain whether I did or did not triturate one. I record it here in order that the cases shall not be made to appear more favourable than they really are; 'good wine needs no bush.'

The 3 per cent. of failure to restore sight by artificial ripening and subsequent extraction of cataract does not count anything against the artificial ripening procedure.

This, then, shows 3 per cent. of eyes without vision after, not necessarily in consequence of, artificial trituration of the cataract and subsequent extraction. This record might be otherwise expressed as ninety-seven successes out of one hundred such cases, the treatment of which has been pushed forward solely with a view of assisting the patients to avoid a period of incapacitating insufficiency of sight. I endeavour to restore sight as quickly as I can, but before all else to avoid blindness, for everyone whose eyes come under my care.

The efficacy of the procedure in completing the ripening of cataracts has grown with the author's experience.

Author suspects that a fluid vitreous humour militates against a successful trituration.

The efficacy of a single trituration, like all my other results from this method, improves with my own experience. Thus in only 9 per cent. of these 100 cases, as against 28 per cent. of my first twenty-five cases, has a single trituration failed to ripen a cataract sufficiently within from one to eight weeks. In six of such nine cases I completed the ripening by a second trituration, and the subsequent extractions went smoothly. In the seventh case of retrituration the first retrituration, like the first trituration of this particular cataract, failed to induce ripeness. A second commenced retrituration of this same cataract made me suspect the existence of a fluid vitreous humour giving insufficient support to the lens, and thus cancelling the effect of such trituration as it would be prudent to do amidst the circumstances.

Actual demonstration of the procedure freely offered.

The best description is a poor substitute for that actual demonstration of the procedure to which all are welcome in the ophthalmic operating room at King's College Hospital or at the Royal Eye Hospital, Southwark.

Description as to how author practises the method.

I must, however, endeavour to describe the procedure as practised by me. I have the pupil widely dilated with a four grains to the ounce solution of sulphate of atropine, applied twice in the preceding twelve hours. I generally use cocaine. My practice is to do a preliminary iridectomy on both eyes and to triturate one. I invariably do my preliminary iridectomy first on the eye I intend to triturate. Having done that iridectomy, having proceeded with my trituration, and that procedure having gone through satisfactorily, I do not hesitate to do the iridectomy on the second eye. The reason for this course is pretty obvious. It has happened (it may happen again, I am always prepared for it to happen, although I have only seen it happen once) that it was necessary, owing to unintended excessive interference with the lens capsule or its attachments, to remove the cataract at the time of the trituration, there and then at the same sitting. I do not like to have, at one and the same time, a recent extraction in one eye and an equally recent preliminary iridectomy in the other. I do not like to expose my patients to all that. I do not like to have all my eggs in one basket.

It is my habit to dilate the pupil widely by atropine, to make a preliminary iridectomy upwards, and to triturate one cataract, under cocaine; then, all being well, I may do iridectomy, but not trituration on the second eye.

Now about the trituration. Having done a preliminary iridectomy in a position which will accord with the direction of my section, when I have to extract subsequently, I let the aqueous humour escape from the wound by depressing its posterior lip with the edge of the tortoiseshell spoon, and then, wetting the back of the shell spoon with the patient's tears, apply its flattish convex surface to the centre of the cornea and stroke the cornea in a radiating direction, at first, very carefully, observing that the iris always slips away in front of each stroke of the spoon. That is to say, as the cornea goes down against the lens the iris recedes from the centre towards the periphery before the pressure of the spoon.

Details of manipulation in triturating.

This slipping away of the iris I regard as being very important. When it does not occur nicely, and a nipping of iris between the lens and the cornea results, then, I think, iritis ensues. From time to time during a trituration, when you have once ascertained that the iris is slipping away nicely, you may make similar radiating strokes with increasing firmness and rapidity, always keeping alert to see that the iris slips away before the stroke of your spoon. If you find it is not doing so, and that the cornea is not falling in before the pressure of your spoon, let more aqueous humour escape. You may do an enormous amount of rubbing on the front of the cornea, but you will not ripen

Important to avoid compressing iris between cornea and lens.

Needful to empty aqueous chambers.

the cataract by this rubbing if there be a fair quantity of aqueous humour in the chamber. I cannot help thinking that the aqueous humour is secreted rather more rapidly the more you triturate. The amount of trituration to be done depends upon two things. Perhaps upon the amount of cortex that requires to be rendered opaque, but much more than this upon the character of the cornea. If you have one of those awkward-looking, wrinkled, fall-in corneæ, which look so dangerous, but usually do so uuinterruptedly well after cataract extraction, then exceedingly little trituration is requisite. If, on the other hand, you have one of those nice-looking, stand-up corneæ, then a good deal of trituration will be wanted. After the trituration I use atropine, not within twenty-four hours, but certainly within thirty-six, and keep the pupil widely dilated.

Guides to the amount of trituration needed.

Secondary iritis seldom serious.

In a few cases there has been a certain amount of iritis, but no bad consequences have followed.

Increased ripening of cataract usually visible from second day after trituration.

I look for a very visible change in the appearance of the cataract from the second to the eighth day after trituration. I am not anxious to see the whole pupil white on the day after the trituration. I have seen it thus suddenly ripened from time to time, and no bad result has followed.

Sometimes a very rapidly formed, very general, very dense opacity wanes somewhat after a week or two. I have noticed a few times that a cataract which has ripened exceedingly quickly and very thoroughly, within the first forty-eight hours after the trituration, has appeared much less opaque within two or three weeks afterwards.

These artificially matured cataracts favour smooth extraction.

These artificially ripened cataracts extract very nicely indeed. The cortex, instead of being a mass of troublesome, sticky, hang-about little bits, comes out very much like overdone bread and milk ; generally, a lot of it in front of the nucleus, some of it with the nucleus, and in less than 10 per cent. of the cases does any cortex remain behind.

I habitually teach that it is a great knack in removing these lenses to immediately follow up with your spoon after the escape of the nucleus. I have seen many take their spoon off as soon as the lens protrudes in, and is obviously ready to escape through the wound. This bad practice is, I know, seductive, but it is reprehensible, the outcome of inexperience or timidity; it too often leads an operator to muddle about with the spoon, to get out the residue of cortex, which is usually behind the iris and aggravatingly inaccessible, without such dangerously persevering manipulation as may provoke a protrusion of vitreous humour, and undoubtedly favours the introduction of germs.

I am convinced that this kind of treatment for immature cataract renders it important that the patient should be very accessible. Immediate proximity of the patient, facility for frequent inspection, and the best of nursing, must be insisted upon if the best results are to be obtained in the greatest number of instances. I mean that, with a new nurse, I should not be content to triturate as freely as I habitually do, though it is an operation I have frequently done on several cases in a week.

Patients should be easily accessible and well nursed if treated by this method.

I have, happily, no great experience of eyes going wrong, but I have very great experience in watching the variations of temperature in ophthalmic patients after operation, and I have come to feel that one of the earliest indications that an eye is not doing quite as nicely as it should is furnished by the thermometer.

A rise of temperature is often the earliest and easiest recognisable symptom of an eye doing amiss after aperation.

I must refer to one important point, viz. the peculiar liability to atropine-excited glaucoma of eyes, at the age to have senile cataract, has been abundantly proved by clinical experience, as it was suggested by Priestley Smith's invaluable research. It must make us ever on the alert, therefore, when using mydriatics for aged persons; but, happily, for this particular procedure, the liability to glaucoma is diminished by the presence of the cataract; a fact which did not escape the recognition of Priestley Smith.

The associated use of a mydriatic with this procedure must keep us alive to the too possible resulting glaucomatous symptoms.

For comparison with my first twenty-five selected cases it may be interesting to note than in the later 100 unselected consecutive cases, none called for immediate extraction of the cataract; two subsequently demanded an unduly early extraction of cataract, viz. within eight days. Both these recovered excellent vision. Of the twenty-five, 28 per cent. were not sufficiently ripened by a single trituration; of the 100, 9 per cent were not sufficiently ripened by a single trituration; of the twenty-five, 2 per cent. had iritis, some with nasty synechiæ; of the 100, 17 per cent. had some

Author's 25 early and 100 later cases compared.

secondary iritis after trituration; but only 2 per cent. had any persisting awkward synechiæ.

As referred to earlier, 28 per cent. of my first twenty-five suffered some slight loss of vitreous humour during the subsequent cataract extraction. In the later one hundred there has been no such noticeably increased liability to extrusion of vitreous humour. I do not think it now occurs in as many as 4 per cent. of the cases. There are available my excellent assistants who have seen this work for years past, and who will be able to testify on this point. Out of the twenty-five the sight of no eye was lost. With regard to this one hundred, 97 per cent. recovered with good useful vision; a few with $\frac{6}{24}$, the majority with $\frac{6}{12}$, and some very few (two) having even better than $\frac{6}{6}$. Of the unselected cases 3 per cent. lost all sight in the eye operated upon. To facilitate comparison I subjoin a tabulated statement of the experiences just referred to.

RESULTS OF TREATMENT OF IMMATURE SENILE CATARACTS BY PRELIMINARY IRIDECTOMY WITH ARTIFICIAL RIPENING BY TRITURATION AND SUBSEQUENT EXTRACTION, SUMMARISED IN TABULAR FORM FOR COMPARISON (MAY, 1890).

First Twenty-five Selected Cases (1884–5).

4 per cent. . .	Required immediate cataract extraction.
28 per cent. . .	Not sufficiently ripened by a single trituration.
12 per cent. . .	Iritis; some with nasty synechiæ.
28 per cent. . .	Some slight loss of vitreous humour during the subsequent extraction operation. The sight of no eye out of twenty-five was lost.

Later One Hundred Unselected Cases (1888–90).

2 per cent. . .	Required an unduly early subsequent extraction of cataract, namely, within eight days; both these recovered excellent vision.
9 per cent. . .	Not sufficiently ripened by a single trituration.

17 per cent. . .	Iritis after the trituration, but only 2 per cent. with any persisting awkward synechiæ.
	No increased liability to loss of vitreous humour is now associated with a previous artificial ripening.
97 per cent. . .	Good useful sight, $V = \frac{6}{24}$ to normal and slightly better.
3 per cent. . .	Lost all sight in the eye.

Since May, 1890, my experience of the procedure has been increasingly satisfactory. Perhaps the briefest and fairest summary of my present practice of the methods and the results obtainable therefrom will be furnished by the following notes made independently by Mr. Cargill of the operations I have practised for senile cataract during eighteen months at the new Royal Eye Hospital in Southwark.

He reports that I have performed there 49 preliminary iridectomies with trituration, and 56 preliminary iridectomies without trituration, or 105 preliminary iridectomies for senile cataract.

Of 105 preliminary iridectomies, I did 49 with and 56 without trituration.

Of the former class, those with trituration, no eye was lost.

Of the latter class, those without trituration, one eye was lost from panophthalmitis supervening. The patient was old and feeble, and in an extreme state of malnutrition from previous long-continued low living.

After preliminary iridectomy with trituration, a second trituration was needed in two instances. Troublesome iritis followed in one instance, but was successfully combated. (This patient was not an example of genuine senile cataract; he was aged thirty-six, and a martyr to rheumatism.)

In one case extraction of the lens was performed three days after the trituration, as the lens capsule had ruptured and the lens was swollen, and there was increased tension. This case, again, was not one of genuine senile cataract, but occurred in a female aged thirty-eight, of bad constitutional type with a strong specific history, but the eye did exceedingly well, and the convalescence from the double operation, performed with only three days' interval, was prolonged in no unusual degree.

In one case slight luxation of the lens was noted before the extraction, which had not been noted before the trituration, and there was slight loss of vitreous humour at the time of the extraction. The cataract in the fellow-eye of the same patient was extracted after a preliminary iridectomy without trituration, and that lens was found to be loose but not luxated.

There was a second instance of escape of vitreous humour at the time of the extraction. In this patient there was a fluid vitreous humour, as had been previously diagnosed, and the probability of loss of vitreous predicted. Both these cases made excellent recovery, and the loss of vitreous was so slight that one may safely anticipate that the restored vision will prove permanent.

Of 58 hard cataract extractions 37 were after this artificial maturation.

Extraction of hard cataract was performed 58 times,—37 times after preliminary iridectomy with trituration; 21 times after preliminary iridectomy without trituration. Every case of extraction did well.

At least no greater need for secondary capsulotomy after trituration, nor greater liability to cystoid cicatrix.

A secondary operation for opaque capsule was done fifteen times. In eight of these instances trituration had been done; in seven trituration had not been done.

There was a cystoid cicatrix in three cases; in one of these trituration had been done, in two trituration had not been done.

This artificial maturation improves the consistence of the cortex.

Among the thirty-seven cataract extractions after preliminary iridectomy with trituration "a bread-and-milk cortex was noted thirty times, and hard cortex seven times." I take it that by "hard" cortex my house surgeon means a lens without cortical matter distinguishable at the operation from the nucleus.

Among the twenty-one cataract extractions after preliminary iridectomy without trituration, sticky cortex was noted seven times and hard cortex fourteen times.

I should say here, perhaps, that I have grown to be much impressed with the exceptionally satisfactory character of the cortex one has to deal with after trituration as compared with cases done without trituration; and I am glad to have my clincal impression confirmed in the powerful way it is by the just mentioned independent observation and record of Mr. Cargill, who adds, as a supplementary note, "In no case of extraction of hard cataract was the cystitome used by Professor McHardy."

I habitually dispense with a cystitome.

"The capsule was always opened by a vertical incision made with the point of a Graefe knife after its introduction by puncture, and prior to making the counter-puncture. In no case in this hospital has he performed extraction of a hard cataract without a preliminary iridectomy. The youngest of the patients on whom the extraction of hard cataract was performed was thirty-eight, the oldest eighty-eight."

The character of cortex as independently noted, and other incidents of recent hard cataract extractions, after preliminary iridectomy in unselected consecutive cases (1893–4).

Thirty-seven with trituration.	Twenty-one without trituration.	
80 per cent.	—	"Bread-and-milk-like," semi-fluid, easily escaping, non-sticky cortex.
None	33 per cent.	Sticky cortex.
20 per cent.	66 per cent.	Hard cortex.
3 per cent.	10 per cent.	Cystoid cicatrix.
21 per cent.	35 per cent.	Required a secondary capsulotomy.

These uniform independent records have their own peculiar weight though they refer to but one section of my practice, as they are, of course, exclusive of what I have done in King's College Hospital and in private. Their indications shown as per centum and tabulated appear to me significant enough.

Forty-nine recent unselected consecutive cases of preliminary iridectomy *with* trituration:

2 per cent.—Required unduly early subsequent extraction of cataract, namely, within three days, but excellent recovery resulted.

4 per cent.—Not sufficiently ripened by a single trituration.

2 per cent.—Iritis, troublesome but controllable, after the trituraton.

4 per cent.—Some slight loss of vitreous humour during the subsequent extraction operation. Apparently unassociated with the trituration, but referable to such independent complications as partial luxation of lens and fluid vitreous.

No eye lost.

Fifty-six recent consecutive cases of preliminary iridectomy *without* trituration :

1·8 per cent.—Total failure: really one eye lost by panophthalmitis supervening in a very feeble, aged, half-starved patient.

Impressed, increasingly impressed as I am as to the usefulness of this procedure in my own hands, I feel I should no longer delay giving publicity to my experience, courting a critical appraisal of the practice according to its merits or demerits, and encouraging its thorough trial by conscientious and capable ophthalmic operators. I append a tabulated statement showing the evolution of its successful practice in my hands.

The evolution of successful and safe maturation of immature senile cataracts by preliminary iridectomy with trituration. Illustrated by the experience of Prof. M. McHardy during nearly ten years.

The first 25 selected cases yielded—	A subsequent 100 consecutive cases (reported May, 1890) yielded—	A recent 49 unselected consecutive cases (independently reported August, 1894) yielded—	
4 per cent.	2 per cent.	2 per cent.	Required unduly early subsequent extraction of cataract.
28 per cent.	9 per cent.	4 per cent.	Insufficiently ripened by a single trituration.
12 per cent.	17 per cent.	2 per cent.	Iritis, troublesome but controllable, after trituration.
28 per cent.	Not noted	4 per cent.	Slight loss of vitreous humour during subsequent extraction.
None	3 per cent.	None	Total failure to restore sight at subsequent operation.

The simple operation for senile cataract, or that without any iridectomy, though scarcely germane to the restricted subject of this review, has of recent years claimed such revived attention from ophthalmic operators as to appear to warrant brief reference on this occasion.

The simple operation for extraction of senile cataract neither universally applicable nor the surest.

The operation for the extraction of senile cataract, without the removal of any iris, may undoubtedly be practised with very happy results in the large majority of cases of uncomplicated senile cataract, occurring in persons of fairly sound constitution. It is, however, an operation which few, if any, discriminating and careful ophthalmologists would urge should be habitually practised in all cases of senile cataract. Such discriminating operators would recommend the iridectomy as a preliminary, or as one stage of the extraction operation, in certain cases of senile cataract; namely, in complicated cases. The prudent recommendation would be because operation with an iridectomy involves a somewhat smaller and better placed initial incision, a less tax upon the recuperative powers of the eye, a less risk of complication through iritis or by anterior synechia, and, in fact, exposes the eye to a less risk of an untoward result.

Increased safety secured by iridectomy.

Certainty of useful restored vision the first desideratum.

As persons see only through their eyes, and have never more than two eyes, and too often only one seeing eye, and as vision can be judged as little, if at all, less precious than life, it is my very strong feeling that an ophthalmic operator should habitually advocate that practice which shall incur the very minimum risk of being followed by the loss of sight of a single eye. Furthermore, the ophthalmic operator who has attained by great experience to a maximum percentage of successful results, and a minimum of lost eyes, by any particular method, will be, and I think quite rightly, very chary of abandoning that method except for very weighty considerations, and then only after ample demonstration of the equal safety and superiority of another method.

For and against the "simple operation."

The inferior safety of the simple operation stands self-confessed by its very advocates, who, to a greater or less degree, pick the cases on which to practise it. The alleged superiority of the simple operation is comparatively insignificant, and amounts to little more, from the patient's point of view, than that he, in the late evening of his life, has a circular pupil instead of a key-hole-shaped one, with its small extension concealed beneath the upper lid, and from the operator's point of view, that there is a distinctly less demand upon his manipulative powers.

Preliminary iridectomy advocated.

Prosecution of the above line of argument leads me further to advocate the practice of the iridectomy as a preliminary to, rather than as a first stage of the actual cataract extraction operation. The preliminary iridectomy can be performed at any time mutually convenient to the patient and operator; is a very simple and insignificant operation; with cocaine, inflicts no more pain than a pin-prick; involves a scarcely estimatable risk to the eye; is speedily recovered from, and, besides the additional facility and security it gives to the subsequent extraction operation, serves a most useful secondary purpose in giving the patient confidence, in dissipating his natural though ignorant apprehension, obviates the occurrence of any bleeding to obscure the manipulation at the time of the extraction of the cataract, and enables that much more grave and delicate operation to be conducted without any pain to the patient, after the patient has, by experience, acquired confidence in the operator, and the operator has likewise gained a knowledge of the patient's behaviour under treatment.

It follows from the immediately foregoing summarised arguments that I am a strong advocate of preliminary iridectomy first and subsequent extraction of senile cataract as being a safer and more proper habitual treatment than the so-called simple operation. Such conviction on my part, of course, increases my opportunities for practising that artificial maturation of immature senile cataract, the desirability of which was sufficiently referred to in the earliest pages of this paper.

This paper will, it is believed, usefully supplement its very abridged summary which is published in the 'Transactions of the Eighth International Ophthalmological Congress,' at which the resulting discussion brought out that the continuing experience of Mr. Hill Griffiths, of Manchester, confirmed his first favourable impression of the operation.

ON SOME CASES

OF

PELVIC SUPPURATION IN THE FEMALE.

By JOHN PHILLIPS, M.A., M.D., F.R.C.P.

The term "pelvic suppuration" may be applied to any accumulation of pus within the pelvic cavity. I have used this definition advisedly, as including "pelvic abscess." This latter term implies a collection of pus which does not exist in the pelvic cavity with a pedicle, or one which can be removed entire, but has its walls formed partly by the parietes or viscera. Hence a pyosalpinx is *not* a pelvic abscess, but one of the many instances of pelvic suppuration. Before entering into the clinical aspect of cases of this kind it would be well, I think, to clear the ground somewhat by touching briefly on the anatomy of those parts which are concerned in the suppurative process, more especially directing attention to those which act as conductors of the septic matter. These appear to me to be—

1. *The cellular tissue.*—The distribution of this tissue in the pelvis is somewhat peculiar. It is well marked around the supra-vaginal portion of the cervix (pericervical tissue), from which site it spreads laterally between the layers of the broad ligaments, being especially abundant at their bases; anteriorly into the spaces on either side of the vesico-uterine pouch, being continuous with the subperitoneal layer on the

abdominal parietes; posteriorly it is found below the pouch of Douglas, from which situation it gives off processes partially encircling the rectum.

2. *The lymphatics.*—These are arranged into two chief sets: (*a*) those around the cervix and upper portion of the vagina, which run along the base of the broad ligament and terminate in the iliac glands; (β) those arising from the fundus uteri (a superficial and a deep set), which are collected into large trunks running just below the level of the Fallopian tubes and parallel with them, and opening into the lumbar glands; by means of these the lymphatics of the tube and ovary are brought into very intimate connection. These two sets anastomose on the uterine surface and between the layers of the broad ligament.

3. *The Fallopian tubes.*—These and the uterus have a common embryonic origin; the tubes, in fact, may be looked upon as hollow branches of the uterus, while the mucous membrane of each is continuous though of different behaviour and arrangement.

4. *Old adhesions.*—Poirier has shown that these are formed to a great extent of lymphatic vessels which, if the adhesions affect the uterus, form an intimate connection between the sub-endothelial uterine layer and the lymphatics of the tubes and ovaries.

The *causes* of pelvic suppuration are chiefly septic infection and gonorrhœa; but there are other cases in which no history of either can be elicited. Taking sepsis, let us suppose that a patient has become the subject of a cervical laceration, either the result of labour or mechanical dilatation, and septic absorption takes place; by what route will the infection travel? Usually it will follow the line of the lymphatics at the base of the broad ligament, and will infect the cellular tissue (basic pelvic parametritis), passing on in some cases to the iliac glands; at the same time, though probably more rarely, the upper portions of the broad ligament may be attacked in consequence of the lymphatic anastomosis already mentioned; the ovary and tube in such a case would therefore remain unaffected. If the inflammatory process should spread further afield, it will extend from the broad ligaments on to the psoas muscles; the rectum may be involved and the recto-vaginal septum dissected in a downward direction; should suppuration occur along any of these tracks, the pus will discharge itself in various and well-known situations, which require no further notice here.

Should the source of infection be situated in the uterus, as in gonorrhœal or septic endometritis, we may have the poison carried (*a*) to the fimbriated end of the tube by direct transmission along the mucous membrane, as is most usual with gonorrhœa; the sequence of events in such a case is that the tube becomes the seat of a catarrhal inflammation, pus is formed and discharged drop by drop through the ostium at the fimbriated end. This material acts as an irritant to the peritoneum and sets up a more or less violent local "protective" peritonitis, resulting in the formation of adhesions cutting off this small abscess cavity from the general peritoneum; the walls of this abscess may be formed partly by ovary, partly by intestines, or by both. When this protective peritonitis fails to occur, the general peritoneum soon becomes involved with generally a fatal result. In other cases the fimbriated end becomes closed, or attached to the surface of the ovary, the pus goes on collecting in the tube, and a true pyosalpinx results, the ovary remaining healthy at first, but later becoming contaminated by direct contact. (β) The lymphatics in the upper part of the broad ligament may convey the poison to the tube and ovary, or to the latter only, and so on to the lumbar glands. This mode of origin would account for cases of ovarian abscess without the presence of tubal disease.

In addition to the above-mentioned varieties, we meet with cases of suppuration in various parts of the pelvis, and in connection with the general peritoneum, in which all the generative organs are apparently healthy, but in which, at the termination of a course of septic fever, localised collections of pus form, possibly preceded by the stage of encysted serous perimetritis. The walls of these abscess cavities are formed by intestines or portions of other viscera covered with adhesions; they are always intra-peritoneal. It is quite clear, therefore, that we may classify pelvic sup-

DESCRIPTION OF DIAGRAMS.

Fig. 1.—A sagittal section through left broad ligament (normal), and viewed from right side (semi-diagrammatic). *f.* Fallopian tube. *p. o.* Parovarium. *u.* Outline of uterus. *o.* Ovary. *b. lig. a.* Anterior layer of broad ligament. *b. lig. p.* Posterior layer of broad ligament. *r.* Round ligament. *v.* Vessels at base of broad ligament. *v.r.* Vaginal roof. *c.* Cervix. *vag.* Vagina.

Fig. 2. Case 1.—Pyosalpinx (*f.*) and suppurating ovarian cyst (*o.*). *k.* Site of artificial rupture.

Fig. 3. Case 2.—Multiple abscess of ovary. *o. o′. o″.* Abscess cavities.

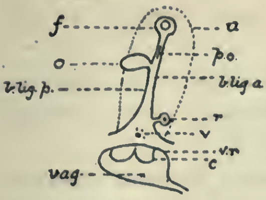
Fig. 4. Case 3.—Abscess in upper portion of broad ligament (*abs.*), with fibroid nodules in uterine fundus (*u.*). Ovary and tube healthy.

Fig. 5. Case 4.—Suppurating hæmatocele of broad ligament base. (*k.*) Site of aspiration, incision, and drainage.

Fig. 6. Case 5.—Abscess in upper portion of broad ligament, pushing anterior layer of broad ligament upwards (*b. lig. a*) and presenting at (*k*), where incision was made.

Fig. 7. Case 6.—Encysted abscess of peritoneum (*k. k′.*). *om.* Great omentum. *p.p.* Parietal peritoneum. *p.* Abdominal parietes. *u.* Uterus. *s.* Symphysis pubis.

Fig. 8. Case 7.—Encysted abscess of peritoneum. *o.* Ovary. The other letters as before.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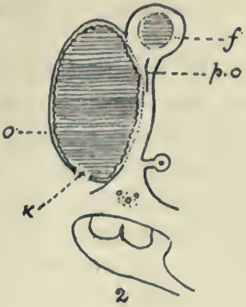
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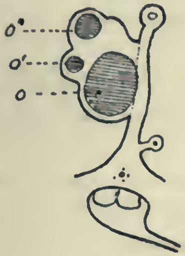
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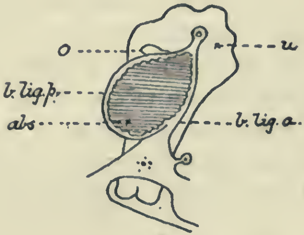
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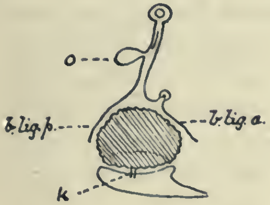
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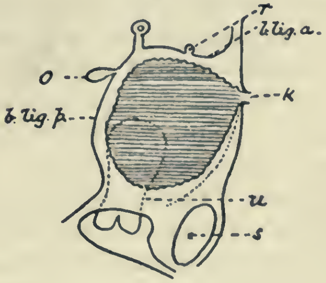
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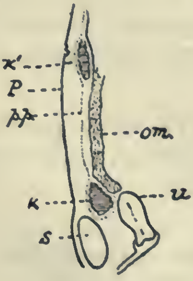
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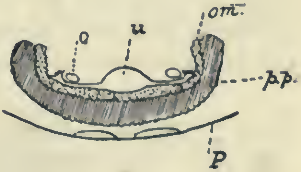
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purations according to their pathological origin as follows:

1. The tube is directly infected from the uterine mucous membrane, pus forms, and its fimbriated end becomes closed; the ovary is healthy (*pyosalpinx*).

2. The ovary is infected through the lymphatic channels coming from the uterus, the tube remaining healthy; this is *ovarian abscess*, and may be simple or multiple (Fig. 3). Suppuration in the ovary and tube may occur together, the former being contaminated by direct contact with the pyosalpinx, or the contents of an already existing ovarian cyst undergo purulent degeneration (Fig. 2).

3. Pelvic parametritis in the upper part of the broad ligament undergoing purulent change, the ovary and tube remaining healthy (Figs. 4, 6).

4. Pelvic parametritis in base of broad ligament, or hæmatocele, breaking down and suppurating (Fig. 5).

5. Adventitious intra-peritoneal suppurating cavities (Figs. 7, 8).

Quite recently a contribution to the bacteriology of pelvic suppuration has called attention to the subject. Of thirty-three cases of suppuration of the adnexa, in thirteen the pus was sterile; in thirteen gonococci were found, one of these, in addition, with bacterium coli from a suppurating abscess sac near the rectum; streptococcus was met with four times. At present nothing practical has resulted from this line of research, at the same time I felt that this departure was worthy of mention.

I have selected seven instances of the types mentioned above from cases which have come under my care during 1893–94, and have appended diagrammatic sketches of the condition in each case made at the time of operation.

CASE 1 (Fig. 2).—*Chronic ovaritis (left); acute perimetritis; pelvic suppuration; abdominal section; ovarian abscess on left side, and double pyosalpinx.*

The patient, æt. 29, married seven years, had never been pregnant. Her catamenia, up to five years ago, regular every twenty-eight days, the loss lasting four days; slight pain first two days. For the past five years pain in right side, worse at menstruation; during this time she has been losing every twenty-one days, the loss has lasted seven days, is more copious and with clots. She remained fairly well up to September, 1893, when she was seized with "inflammation of the bowels," and on October 25th, 1893, Mr. Francis Stokes found her suffering from acute perimetritis, temp. 102°, pulse 120, with a very tender and tympanitic abdomen; she gradually improved, but the temperature never became normal at night.

I first saw her March 14th, 1894. She was then very emaciated and wore an expression of great pain; the abdomen was slightly tumid; tenderness most marked in the left iliac fossa, where a hard lump could be felt just above the edge of Poupart's ligament. *Per vaginam:* the uterus was retroverted and fixed, os uteri pin-holed; the whole of the vaginal roof was of woodeny hardness and somewhat irregular on its surface; the cervix projected well and neither fornix was obliterated.

April 23rd, 1894.—She has been now nearly six weeks under treatment by careful feeding, hot douches and other local applications; her temperature has now gradually assumed the hectic type (102° at night and 99° in the morning), she is losing flesh and has sweats towards 3 o'clock every morning.

Operation.—The abdomen was opened in the usual position by a 3-inch incision. The pelvic organs and great omentum were very adherent, and required careful separation. The left half of the pelvis was occupied by a fluctuating swelling the size of a small cocoa-nut, firmly attached to the floor of the pelvis; the Fallopian tube was elongated and distended with pus, and intimately adherent to the fluctuating swelling; this proved to be a suppurating ovarian cyst or ovarian abscess. In breaking down the adhesions at the base of the swelling, rupture took place through a thinned-out portion of the wall (fig. 2, *k*), and much fœtid pus escaped into the sponges around it. The broad ligament was tied and the mass cut away.

On the right side there was a pyosalpinx containing 3 ounces of pus, very adherent to the surrounding organs, but the ovary was healthy; the mass was ligatured and removed. Boracic acid douche, glass drain-tube inserted; much hæmorrhage and collapse; the operation lasted sixty-five minutes. The glass tube was necessary for four days because of the offensive discharge, during which time her pulse was 140, very thready, but her temperature normal; she made a good recovery.

In this case both gonorrhœa and pregnancy must be excluded; the pyosalpinx had probably existed (on the left side at least) for some time; by direct contact a pre-existing ovarian cyst doubtless became infected, with the result of ovarian abscess. It should be noted that the ovary on the right side was healthy; possibly it might, later on, have taken on suppurative change.

Case 2 (1894, Hosp. No. 1318; Fig. 3).—*Septic puerperal perimetritis; prolonged fever; pelvic suppuration; abdominal section; multiple abscess of right ovary; separation of healthy left ovary and tube from adhesions.*

A primipara, æt. 35, was confined by a midwife nearly four months before the operation; it was found necessary to call in the aid of a medical man, who applied the forceps; the perinæum was slightly torn, and began to slough on the third day; acute perimetritis appeared on the fourth day;

her temperature varied between 103° F. at night and normal in the morning for eight weeks, when I first saw her; she then had a fixed uterus, and two lumps one on either side of it, of indefinite shape but extremely tender. A month later the swelling in the left half of the pelvis had become much smaller; that on the right, however, was noticed to be increasing in size; the temperature was about 102° at night and 99° in the morning; she was losing flesh rapidly and her condition becoming extremely unsatisfactory. Sixteen weeks after labour the abdomen was opened in the median line; the left tube and ovary were found matted together on the floor of the pelvis; the adhesions were separated, and the organs being healthy were left intact; the right ovary was distended by an abscess of the size of a small orange, and was adherent to the pelvic floor, cæcum, and appendix; during the separation of the mass the abscess ruptured, and extremely fœtid pus escaped; the ovary and tube were ligatured and cut away, and a glass drainage-tube was inserted. The patient was extremely collapsed and her condition very critical for forty-eight hours, but the temperature sank to normal immediately, and she was discharged at her own request with a small sinus. On examining the parts removed, it was found that there were two small abscess cavities in the ovary, in addition to the ruptured sac.

The cause here was evidently due to sepsis, the poison travelling along the upper set of lymphatics without affecting the Fallopian tubes on either side. Possibly some small cysts already existed in the right ovary, and acted as a predisposing cause to localisation of suppuration; it is worthy of note that although the perimetritic disease was first noticed and most evident on the left side, it gradually quieted down to the condition described at the operation.

Case 3 (1893, Hosp. No. 1664; Fig. 4).—*Pelvic abscess; abdominal incision and drainage; convalescence complicated by epidemic influenza.*

The patient, æt. 39, married eleven months, and never pregnant, suffered for some months from increasing dysmenorrhœa, causing her to lie up for twelve hours. Pelvic condition was apparently normal. Six months later she attended the out-patient room with the following history. After her former visit she remained quite well up to six weeks ago, when during menstruation she was suddenly attacked with inflammation of the bowels, which laid her up for a month; she has menstruated since naturally, but feels ill generally, and is losing flesh.

She was admitted with temp. 102°, pulse 118. Abdomen tender and slightly swollen, especially on left side. The uterus was found pushed over to the right and fixed, while the left half of the pelvis was occupied by a large, fixed, extremely tender swelling, of the size of a small cocoa-nut, but very high up in the pelvis.

October 7th, 1893.—Under anæsthesia, in the left iliac fossa a rounded swelling could be made out cropping up above the brim of the pelvis.

Per vaginam.—The uterus was fixed as before; the fundus could be felt irregular and nodular, the sound passed three and a half inches in the normal direction. After carefully cleansing the vagina, an aspirator was plunged into the mass on the left side, and some very fœtid pus (5½ ounces) drawn off.

November 3rd, 1893.—The abdomen was opened. The fundus uteri was found studded with small fibroid nodules. The abscess occupied the upper part of left broad ligament, pushing the posterior wall backwards; the right tube and ovary healthy, as was also the left ovary, the tube much elongated and flattened out. The abscess sac was cut off from the peritoneum by stitches, and then opened; much fœtid discharge was let out, and a glass drain-tube inserted. Her temperature became normal immediately after the operation, and except for an intercurrent attack of influenza she made a rapid recovery. Before discharge from the hospital the uterus was found semi-mobile, and in the left broad ligament and posteriorly a small, hard, painless, fixed lump (the remains of the abscess sac) was found.

Had not actual inspection and touch assured me that the tubes and ovaries were healthy, I should have considered disease of one or both was the cause of this patient's illness. The pus was located extra-peritoneally, and whether due to abscess from a breaking-down cellulitis or hæmatoma, or to suppuration in a broad-ligament cyst, it is impossible to say with any degree of certainty.

Case 4 (1893, Hosp. No. 1906; Fig. 5).—*Pelvic suppuration; vaginal aspiration, incision and drainage.*

The patient, a 4-para, æt. 36, applied at the out-patient department for considerable pain in the lower abdomen. Her last child was born nine years ago, and she had remained quite well until four days ago, when the catamenia, which had been present and normal for two days, suddenly ceased; she has been in constant pain in the left side and lower abdomen since; subsequent free metrostaxis. *Per vaginam:* the uterus large and fixed especially on the left side; to the left is a hardish swelling fixed and tender, the size of an orange. The left fornix obliterated.

In eleven days the pain was considerably less, but metrorrhagia continued; night sweats; temp. 101° F.; the pelvic swelling much as before, but softer. An aspirator was inserted into the swelling with full antiseptic precautions, and some putrid pus (2 ounces) drawn off. The tumour being low down, the vaginal wall was incised and the cavity stuffed with antiseptic gauze.

In fourteen days' time the abscess sac had healed, and beyond a slight thickening in the left broad ligament, nothing could be felt.

This case was doubtless one of hæmatocele originally, with subsequent suppuration, possibly owing to its proximity to the rectum; the treatment here was clearly indicated, perfectly easy to carry out, and successful in its result; it was essentially a case for treatment by vagina.

Case 5 (Fig. 6).—*Suppuration between layers of broad ligament after septic labour; gradual elevation of anterior*

layer and presentation of abscess at abdominal wall; incision and drainage.

The patient, æt. 32, a 3-para, was confined very rapidly on November 10th, 1893, the labour lasting half an hour; on the sixth day she had a rigor and temperature of 104° F., with much bearing down. The temperature and pulse gradually descended, and, at the end of three weeks the former varied between 100° F. at night and subnormal in the morning; this condition went on for nearly a month more, when she came under my notice; there was much emaciation, and the pulse at night often reached 140 per minute.

The left iliac fossa was occupied by a hard, tender, fixed mass, with no fluctuation present; *per vaginam* this swelling could with difficulty be made out; there was rather a deep cervical laceration on left side, but whether of old standing or recent could not be ascertained. Fourteen days later, *i. e.* at the end of about eight weeks, I found her condition considerably worse, the temperature ranging higher and pulse quicker; the swelling was more marked anteriorly, and fluctuation was present.

January 8th, 1894.—The abdomen was opened over the swelling at the site indicated in the diagram; nearly a pint of curdy, sweet pus escaped, but the peritoneal cavity was not opened; with one finger in the vagina and another in the abscess sac (the wall of which was very thick), the uterus could be made out to the right and below, enlarged and fixed; a glass drain-tube was inserted. Her condition improved from the time of operation, and the sinus had quite healed in three weeks' time.

This was a case either of pelvic parametritis (cellulitis) of the upper part of the left broad ligament, or a suppurating broad-ligament cyst consequent on a septic labour; the infection probably passed from the uterus to the superior portion of the broad ligament by means of the upper set of lymphatics. There was fluid present long before fluctuation could be made out, the very thick sac walls preventing detection earlier; this was a case especially suitable for abdominal drainage.

CASE 6 (Fig. 7).—*Intra-peritoneal abscess in two situations; abdominal section; drainage.*

The patient, single, æt. 25, had always enjoyed good health until five or six years ago, when she suffered much from premenstrual dysmenorrhœa, which was becoming worse.

January 7th, 1893.—On the second day of menstruation she took a long drive in an open dog-cart. She came home in much pain, and found that the flow had ceased; the pain getting much worse, and sickness coming on, Dr. Godfrey Parrott was called in to see her. He found her lying with the knees drawn up, the abdomen tympanitic and tender, pulse 112, and temp. 101°. No vaginal examination was made at the time.

The temperature remained about 100°, the pulse increasing in rapidity and diminishing in quality, with loss of flesh, until nearly the fifth week of her illness, when chloroform was given and a pelvic exploration made. In the left iliac fossa and in front an irregular mass was felt, fixing the uterus and pushing it backwards and to the right side. Below and to the right of the umbilicus was a hard, kidney-shaped swelling, apparently adherent to the abdominal parietes. In the middle of the seventh week of her illness I saw her, and found the condition as above described; temp. 102°, pulse 140, very feeble; much wasted, especially since the copious early morning sweats which had set in about fourteen days

February 22nd, 1893.—I opened the abdomen in the median line; the great omentum was closely adherent to abdominal wall, and was dense in texture. On separating its surface, the finger passed into an abscess cavity, which contained about two ounces of most fœtid pus. This was the hard swelling felt to the right of and below the umbilicus. The mass in the left iliac fossa was found to consist of intestines, bladder, and broad ligament, matted together and extending into the utero-vesical pouch, the posterior wall being formed by great omentum above, uterus and broad ligament below. On separating the parts, an abscess cavity was found containing 2 or 3 ounces of similarly putrid pus to the other. Both tubes and ovaries were healthy, and nothing was removed. Both abscess cavities were swabbed with Tinctura Iodi; a glass drain-tube was inserted into the cavity between the bladder and uterus, and the abdomen closed. Collapse was very considerable. Convalescence set in almost immediately, but the pulse did not quiet down below 100 per minute until the end of the tenth week of the illness, and the offensive discharge was most persistent until the eleventh week. Her getting up was retarded by a bedsore, but on April 30th the wound had healed and she was up and about.

Her subsequent history has been quite satisfactory.

As the appendages on both sides were found healthy, by both inspection and touch, we must look elsewhere for the origin of the illness in this case. It would appear that the lower abscess was probably the result of an encysted perimetritis, but how the upper one originated is more difficult to understand; it may either have arisen in a similar way by encysted perimetritis, or what is more likely by septic infection along the substance of the great omentum.

Case 7 (Fig. 8).—*Large intra-peritoneal abscess; abdominal incision and drainage; death from shock.*

Mrs. A. G—, æt. 27, 4-para, was confined at the end of November, 1893, by a midwife, the labour being normal. On the third day the patient had high temperature, distended and tender abdomen, and all the symptoms of puerperal perimetritis. The child died of tetanus on the fourth day. Her temperature gradually descended to normal, and remained so for twenty-four hours on January 24th, 1894, or nine weeks after her labour. Afterwards her condition became less satisfactory, her temperature rising at night, and her weakness increasing. No sweats. May 25th, 1894, or four months after her temperature had become normal, I found her extremely emaciated, temp. 100°, and pulse 130—140.

Per hypogastrium.—A tender swelling of indefinite shape and size was felt cropping up above the pelvic brim, in the median line; the abdomen quite flat and painless; she was unable to straighten her right leg.

Per vaginam.—The uterus fixed and pushed backwards; occupying the whole vaginal roof was an irregular, ill-defined, nodular mass.

June 1st, 1894.—The abdomen was opened in the median line; immediately on reaching the parietal peritoneum a fluctuating swelling bulged into the wound, and nearly two pints of extremely offensive flaky pus escaped. The abscess cavity was bounded in front by the parietal peritoneum, behind by the great omentum, below by the uterus, and the anterior cul-de-sac. The cavity stretched back into the loins on both sides. The great omentum was very thin, and an opening was made accidentally into the true peritoneal cavity. The uterus with its broad ligaments was found closely adherent to the posterior surface of the omentum; the tubes and ovaries were quite healthy. The abscess sac was stitched to the abdominal wound. Death from shock in ten hours.

I have selected this case because of the peculiar part played by the great omentum. Why general septic peritonitis did not occur it is difficult to understand, with so thin a partition cutting off the pus from the peritoneal cavity. The death of the child from tetanus is certainly evidence of septic influence if any were necessary.

The preceding cases have been given somewhat fully in the hope of clearing up some points of doubt in connection with this debatable subject.

The limits of this paper will not permit of more than passing mention of the differential diagnosis of pelvic para- and peri-metritis: the subject has been most ably and exhaustively treated by Dr. Cullingworth in a recent contribution on pelvic inflammation. He points out very clearly the physical signs which attend parametritis arising from cervical and fundal infection as compared with perimetritis; he also adduces important evidence from the etiology and amount of pain in each condition.

By what symptoms are we able to diagnose the existence of pelvic suppuration? Given that a more or less fixed swelling is felt in either fornix or in either right or left posterior quarter of the pelvis, the following factors appear to be of importance:

1. The previous history of a labour, miscarriage, or uterine operation followed by signs of sepsis (Cases 2, 5, 7).
2. Old-standing tubal or ovarian disease (Case 1).
3. Latent gonorrhœa in the husband.
4. Suddenness of attack, and during menstruation, pointing to hæmatocele (Cases 3, 4).

Out of sixty-three cases observed, and of which I have full notes, thirty-six or more than 50 per cent. were due to the first of the above causes; as sepsis is an avoidable accident, this percentage should gradually become reduced as our means of prevention become more accurate and their details more generally carried out. Of the remaining twenty-seven cases, fifteen were certainly the subjects of pre-existing chronic ovaritis or salpingitis; I could only trace four to direct infection from a latent gonorrhœa, and I must confess that I think this cause has been somewhat overrated; five cases were evidently due to suppurating extra-peritoneal hæmatoma or parametritis; while in three the previous history gave no clue to the cause of the attack.

5. A more or less prolonged period of irregular temperature, and usually of the hectic type.
6. Loss of flesh and increasing weakness.
7. Early morning sweats.
8. Rapidity of pulse, out of proportion to the temperature.
9. Pain.

A point about the temperature of importance seems to be that a very considerable amount of pus may be present in the pelvis, and yet the temperature not rise above 99° F. at night for sometimes a week at a time. The length of time over which this kind of temperature may extend varies very much; in Case 7 it was as much as four months, if not longer.

The early morning sweats are considered, as a rule, diagnostic of suppuration; but when pus is localised in the pelvis this is not the case; they certainly occurred regularly in Cases 1 and 6, but were absent or not noticed in the others.

The loss of flesh and rapidity of pulse seem to me to be symptoms of the greatest importance; in all the cases detailed except Case 4, and in forty-one of those sixty-three already mentioned, both were present in a marked degree, and I should be disposed to lay considerable stress upon their value: with these, an irregular temperature, and a lump in the pelvis which is either stationary or slightly increasing in size, I think pus can be safely diagnosed.

By pain I do not allude to that attending the initial peri- or para-metritic attack, but that which arises later on from pressure upon the various nerves of the pelvic plexus; for instance, pain down either leg is of frequent occurrence.

When the presence of suppuration is clearly established, it becomes necessary to consider what steps are advisable to evacuate the pus; we have choice of the following:

1. Aspiration, incision, and drainage *per vaginam* (Case 4).
2. Abdominal incision, and drainage from above, the peritoneal cavity being opened (Cases 3, 6, 7) or not (Case 5).
3. Abdominal incision; peritoneal cavity opened and suppurating sac removed (Cases 1 and 2).
4. Open abdomen, aspirate the swelling, and drain by abdomino-vaginal tube.
5. Hysterectomy, *per vaginam.*

Taking the last method into consideration, I may say that it has received the support of Drs. Jacobs and Segond; the latter introduced the subject at the recent Brussels Congress, and stated that he had never performed the operation on any case which would not have been treated by abdominal section with removal of the appendages. Although in the discussion much support was given to this method by foreign authorities present, I feel sure this will not be the case in this country; personally, I have never met with a case of pelvic suppuration which required such an extreme measure.

Aspiration, with incision and drainage *per vaginam,* has been rather thrust aside of late, owing to the prominence given to abdominal section; but there are many cases which should be thus treated rather than by the abdomen, because of the better drainage and the less risk.

Dr. Mundé has most successfully advocated this method, and more recently Vogel has published the results of thirty-four cases treated in this manner, curing twenty-three or 67·6 per cent., seven were improved, and four remained uncured.

Where the abscess sac is low down in the pelvis, situated in the base of the broad ligament, not tending to ramify, and of small size, there is no doubt that this is the proper mode of procedure. When there is a pyosalpinx, a suppurating ovarian cyst, or abscess high up in the broad ligament, the right course to pursue is to open the abdomen, and if possible to remove the abscess sac, and if that is impossible to drain.

Drainage by abdomen and vagina is sometimes necessary;

the only danger attending it is that of wounding the bladder. A tube in this case may be worn for months before cure results.

The preliminary aspiration after opening the peritoneal cavity is of great value, and has been strongly insisted upon by some American authors as necessary in every case.

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THE

TREATMENT OF GONORRHŒA AND GLEET BY MEANS OF THE URETHROSCOPE,

AS ILLUSTRATED BY THE

RESULTS OF 500 CONSECUTIVE CASES TREATED IN THE
OUT-PATIENT DEPARTMENT OF KING'S
COLLEGE HOSPITAL.

By F. F. BURGHARD, M.D., M.S., F.R.C.S.

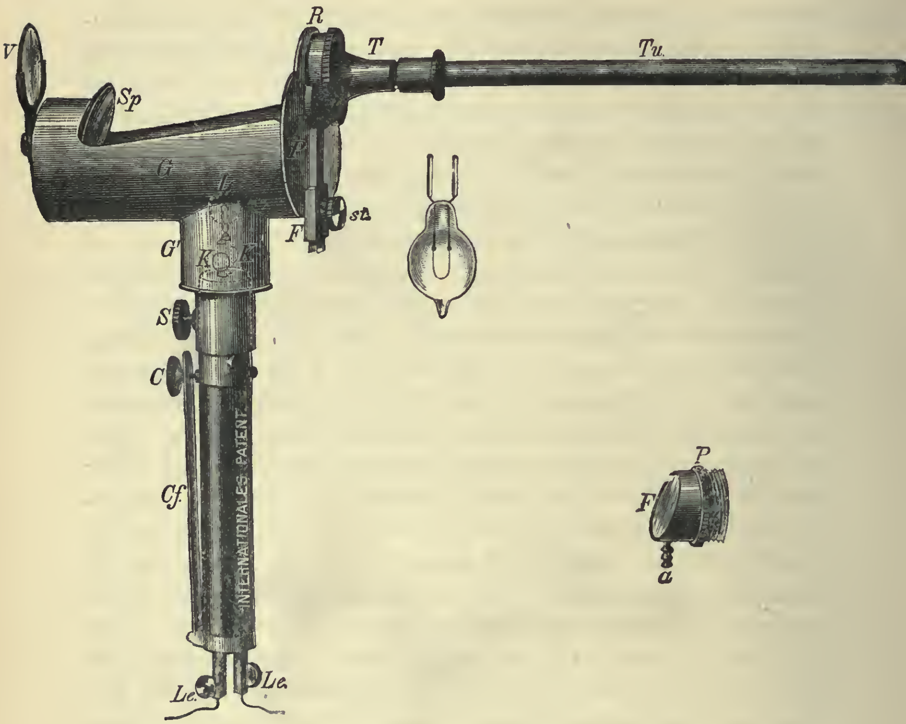
The older methods in vogue for the treatment of gleet have so long been recognised as uncertain in theory and unsatisfactory in practice that there is but little need to advocate at any length the claims of such an instrument of precision as the electric urethroscope in the management of this frequently intractable and obscure disease. It is an admitted fact that the lesion of which the gleety discharge is a symptom is often extremely limited in extent and localised to one particular spot in the urethra ; and to subject the whole of the urethral mucous membrane to the irritation likely to be produced by the action of the strong topical applications requisite for the cure of the diseased area is to run the risk not only of failing to cure the malady but of actually aggravating it considerably. It is true that by the use of such instruments as Guyon's urethral injector or one or other form of caustic catheter these risks are reduced as much as possible to a minimum, but at the same time the prospects of a cure in really bad cases are not proportionately increased, and the use of these instruments is not likely to engender much confidence in the mind of the surgeon employing them. The same remark applies to the use of antrophores (or medicated spring-bougies) or any other of the soluble medicated bougies, most of which I have employed at various times, with but a small modicum of success.

With the electric urethroscope, on the other hand, the case is entirely different. By its means the urethra can be minutely examined a few millimetres at a time, from the internal to the external urinary meatus, and the diseased area or areas found and brought directly within the focus of electric illumination, the surface cleaned and examined and suitable applications made without the least disturbance to any other portion of the urethral tube. It must, I think, be granted, therefore, that properly carried out urethroscopic examination and treatment is a method as perfect as we can obtain, short of laying open the urethra and examining and treating it in the light of day. The only direction, therefore, in which future progress is to be looked for lies in perfecting the particular form of instrument used, so that the most accurate possible diagnosis may be made, and in adding to our knowledge as to the best methods of treatment to be employed for the pathological conditions met with.

It may be objected that the urethroscope is an instrument which, from its complicated appearance, requires some special skill in handling, and that therefore a prolonged study is required before one can hope to be able to recognise diseased conditions of the urethra by its means. In reality this is far from being the case. Anyone who has seen it in use will agree that the necessary manipulations are very simple. All that is required is care, gentleness of manœuvring, attention to certain simple rules, and a thorough knowledge of the appearances met with in the healthy urethra, in order that normal conditions may not be mistaken for disease. Familiarity with the various details to be observed in the healthy urethra is quite easily attained. Normal urethræ are plentiful, and as a urethroscopic examination, if carefully carried out, need not entail discomfort—even in the absence of cocaine—in the slightest degree to any but the most irritable subjects, it should be a simple matter for the beginner to make himself quickly acquainted with all the various appearances met with in health; it will then be but a step to detect pathological deviations.

During the last five years I have been in the habit of employing the urethroscope in almost every case of chronic urethritis that has come under my notice in the Out-patient Department of King's College Hospital, and, as I have kept detailed notes of nearly every one that I have seen during this period, I propose to give in this paper a brief sketch of the results that have been obtained by its means. The number of cases upon which the analysis is based is 500; this number has been taken because, although not representing the entire number treated, it represents pretty accurately the number of cases in which the history is reliable, and where it could be ascertained if the cure was complete. There are, of course, several cases that were lost sight of after the first or second visit, and these have not been included, as no reliable information one way or the other can be obtained from them. Out of these 500 cases exactly 100 were cases of gonorrhœa more or less acute: the remaining 400 were cases of gleet. The cases of stricture and urethritis from other causes are not included here; I hope to deal with them in a subsequent paper. To this subsequent paper must also be relegated many important points connected with the technique of the examination, the morbid appearances met with, and the details of the healthy urethroscopic appearances. In the present one I must limit myself to the briefest possible description of the instruments used and the methods of treatment adopted, before I pass on to analyse the results obtained.

The instrument that I have used hitherto is that invented and patented by the well-known mechanician J. Leiter of Vienna, and illustrated on the next page. It is simple in construction, easy to use, and will be found quite sufficient for the treatment of the majority of cases likely to be met with in practice. As will be seen from the woodcut, it is so arranged that the



light from the small electric lamp *L* is reflected by the concave mirror *Sp* down the urethral speculum *Tu.* The mirror is so arranged that, while concentrating and reflecting the light, its upper margin does not interfere with the line of sight along the tube; while, to magnify the picture of the urethral mucous membrane illuminated at the distal end of the tube, the eye is applied to a small lens, *V.* The urethral tube joins the body of the machine at *T*; and the former can, by means of a screw arrangement at *F,* be raised or lowered in order to secure better and more direct illumination. The lamp is illuminated by pressing the spring *Cf* against the handle of the urethroscope by the hand holding it; or permanent contact can be secured by screwing home the screw *C.* The urethroscopic tubes, of which several should be at hand, must be of relatively large calibre, and should range from about Nos. 21 to 31 French.

The tubes are fitted with a suitable wooden obturator to facilitate their introduction, and have the distal end bevelled away at an angle of 45°, in order that as large a surface of the urethra as possible may be exposed. These tubes are only comparatively short, so that the most may be made of the illumination; but nevertheless almost the entire length of the urethra may be explored by their means, as it is only necessary to push them gently on towards the bladder, and thereby cause the penile portion of the urethra to fold or "telescope" upon itself. By this manœuvre the prostatic portion can be reached and explored. If, however, it is desired to actually examine the internal urinary meatus itself, it becomes necessary to prevent the outflow of urine from the neck of the bladder. For this purpose a special angled tube may be used, and urine is prevented from escaping by causing the tube to terminate in a closed rounded end. Inspection of the urethra is effected by means of a small oval glass window at the elbow of the tube, which lies directly in the path of the rays of light. This prostatic tube is, however, of very little practical value. The obliquity at which the glass is set, and the facility with which its outer surface gets fouled, being such as to prevent anything approaching a satisfactory view being obtained; while the fact that the tube is closed at the end effectually interferes with any attempt either to clean or to treat the areas exposed to view.

The current for the light is of course best obtained from the main by means of the interposition of a transformer, but where that is not possible a sufficiently satisfactory illumination can be obtained by means of a portable battery of about six cells, or a suitable accumulator.

It goes without saying that it is of the utmost importance to maintain the most rigid asepsis with regard to the instruments employed. Such an accident as the inoculation of one patient from another should be rendered impossible by the use of perfect cleanliness and prolonged soaking of the tubes, obturators, probes, &c., in 1 in 20 carbolic lotion before and after use.

Stout wires having the distal ends roughened after the manner of a Playfair's probe were used for the introduction of cotton-wool mops through the tube for the purpose of rendering the mucous membrane dry and clean, and thus facilitating the access of the topical applications to the affected spots.

If the meatus is too small to admit a No. 22 (French) tube, it should be incised downwards until it is rendered sufficiently wide—an operation that the application of cocaine renders easy and painless. In all my cases this was done where a No. 22 could not be introduced without it, and the total number in which it was necessary was 10 (or 2 per cent.). It is essential that the largest sized tube should be used that the urethra is capable of taking; for it is most important, both as regards diagnosis and treatment, that the longitudinal folds into which the urethral mucous membrane is thrown in the quiescent state of the organ should as far as possible be obliterated. This distension is still further facilitated by the attachment to the urethroscope of some modification of the inflating apparatus represented at *F* in the accompanying woodcut. This acts essentially by occluding the proximal end of the tube by means of an obliquely placed window or diaphragm of glass, which thus allows the urethra, which must be firmly squeezed against the periphery of the tube, to be distended by air blown through the little tube *a*, while at the same time it does not interfere with free inspection of the urethra thus distended. If topical application is required, the spot is noted and the window opened, when the application can be made through the tube in the usual way to the now collapsed mucous membrane.

The technique of the examination is as follows. The tube is anointed with glycerine, not oil, as that is too adherent to the urethral mucous membrane, and helps also to obscure the view. It may also be warmed, and it should then be introduced into the urethra until it has passed just beyond the painful spot of which the patient complains, or beyond the particular portion of the urethra that it is intended to examine. The obturator is then withdrawn, and the body of the urethroscope affixed to the tube and the light switched on. The exposed area is then carefully mopped with a small pledget of dry salicylic wool, and the examination made. If it is desired to apply some solution, such as silver nitrate, to this area, it is done by means of another small mop which is lightly impregnated with it. It is important that the mop should not be sufficiently saturated to allow any surplus fluid to remain in the urethra. If this should happen, the excess must at once be mopped up by dry wool, or severe irritation to the adjacent healthy mucous membrane will result. Another important point to bear in mind is that the tube should always be introduced to the furthest point of the urethra that it is desired to examine, and that the examination of the urethra should proceed from *behind forwards*. If this be done, much pain, bleeding, and consequent obscurity will be avoided. The use of cocaine previous to the introduction of the tube is but rarely necessary, except in cases of acute urethritis, where its employment is certainly called for. In none of my cases, either in hospital or in private, have I had to resort to its use in chronic cases. Indeed, I am strongly of opinion that its use in such cases is not only unnecessary, but sometimes actually harmful. And apart from its toxic effects—which in these cases are perfectly well known—it hinders one's work by abolishing that very useful sign, viz. the appreciation by the patient of the peculiar tender spot as the tube passes over it, and much valuable time may be wasted in the search for it when the urethra is insensitive. I have found, too, that the application of the strongest solutions of silver nitrate do not, as a rule, cause pain; little beyond a sensation of warmth is experienced.

The results of the cases treated are as follows. I have divided them into two groups,—acute gonorrhœa and chronic urethritis or gleet.

Acute Gonorrhœa.

The total number of cases treated was 100. These have been grouped according to the period during which the disease had lasted. There were—

In Group	A.—In first two days of the disease .	17	cases.
„	B.—Between second and fourth days .	29	„
„	C.—Between fourth and seventh days .	48	„
„	D.—After the seventh day . .	6	„
		100	

All the cases in Group A were treated in the same way. Twenty drops of a 1 in 20 solution of cocaine were injected down the urethra and rubbed well into contact with the mucous membrane. After the lapse of a few minutes the patient was directed to micturate, in order to clear away any discharge, and also to remove excess of cocaine. The tube was then passed down the urethra until it had reached healthy mucous membrane, which in most of the cases was about two inches down. Then, after the light had been affixed, the tube was gradually withdrawn, until the line marking the distal (bladder end) limit of the inflammation was reached. A mop slightly moistened with a dilute solution of carbolic acid, and large enough to fill the calibre of the tube, was next introduced into the urethra, and the latter freely mopped out all the way to the meatus, the tube in the meanwhile being gradually withdrawn to allow of this being done. The tube was then introduced again as at first, the urethra below its open end firmly occluded by pressing its walls into contact with the thumb and first finger, and fifteen minims of a solution of silver nitrate (gr. xx to the oz.) poured into the tube. The latter was then gradually withdrawn, the occlusion of the urethra below being still maintained, and in this way the strong silver solution was brought thoroughly into contact with the carefully cleaned affected area. Any excess of fluid is of course expelled from the meatus as the walls of the urethra come together, and this is further promoted by drawing the finger up along the urethra from the point where it was compressed to the glans penis. The after treatment consisted in the use of a urethral douche of warm water, and the internal administration of boric acid in ten-grain doses. The usual dietetic rules were of course enforced. The results were as follows:

2 cases were cured within four days without any further treatment.
2 „ „ twelve days, after having had a second application.
3 „ „ three weeks, after requiring a third application.
10 cases ran the ordinary course of acute gonorrhœa, and did not appear to be influenced in any way by this particular method of treatment.
—
17

GROUP B.

Here, with one exception, all the cases were treated alike. The technique was the same as in Group A, except that generally the disease had spread much further down the urethra, and, in consequence of the larger inflamed surface that had to be dealt with, the solution of silver nitrate was of the strength of ten grains to the ounce only for the first application; if a second was needed, a stronger solution was then employed. The exception that I have referred to occurred early in my cases, and was one where, by the fifth day, the disease had extended down to very near the triangular ligament. To this large area, by some mistake, a solution of twenty grains to the ounce of the silver salt was applied; with the result that the patient had that same night hæmorrhage from the urethra, acute retention of urine, and intense œdema of the prepuce, with thrombosis of the dorsal vein,—from all of which he speedily recovered under appropriate treatment, though his gonorrhœa continued to run its usual course. The results of the cases are as follows:

In 5 cases the patients got well within five to ten days without further treatment.
„ 7 „ „ „ fourteen to twenty days, having had a second application.
„ 17 „ the affection appeared to run its usual course unaffected by the treatment pursued.
—
29

GROUP C.

Here, again, the extent of the inflammation was pretty considerable, and the majority of the cases—about sixty—had the weaker solution of silver nitrate (gr. x to the ounce) applied. In some few cases other applications, such as sulphate of zinc, gr. xx to the ounce, or methyl violet solution, 1 in 500, were used; and in the few remaining cases the stronger solution (gr. xx to the ounce) of silver nitrate was applied, these being cases where the inflammation, though intense, was quite localised. The after treatment was the same as in the other cases. The results were as follows:

In 5 cases cure resulted in about seven days without further treatment.
„ 2 „ „ „ fourteen days, a second application having been required.
„ 41 „ the treatment exerted no apparent influence for good.
48

In this last group it is to be noted that in several of the cases the discharge was increased after the application, the chordee accentuated, and the general condition aggravated; so as to distinctly leave the impression that the patients were better off under the old *régime* of copaiba and non-irritating injections.

GROUP D.

In this small miscellaneous group are cases from the eighth to the twenty-fifth day. The strength of the solution applied varied with the amount of scalding present, and the amount of inflammation disclosed by the urethroscope. The results were as follows:

1 case was cured by one application in a week.
1 „ „ after a second application in a fortnight.
4 cases were unaffected by the trreatment.
6

So that, to sum up all the cases of acute gonorrhœa thus treated, we have, out of 100 cases—

13 cases cured after a single application, and within the week.
12 „ „ second application, and within the fortnight.
3 „ „ third application, and within three weeks.
72 „ apparently entirely uninfluenced for good by the treatment; some of them apparently aggravated by it.
100

The majority of these results were obtained in the year 1890,—a considerable time before the late Mr. C. E. Cotes published his paper on "A New Treatment for Acute Gonorrhœa,"* wherein he advocated a procedure very similar to that I have already detailed. Upon the appearance of his paper I was so much struck by the dissimilarity between his results and my own, that I returned once more to my old treatment, only to find that the results were the same as before. I have now practically abandoned it in acute cases

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* 'Lancet,' 1892, vol. i, p. 461.

—at any rate in hospital practice—in favour of the older method of frequent mild antiseptic injections.

While, however, the method I have described as applied to the treatment of acute gonorrhœa, has, in my hands, been very disappointing, its value in cases of gleet and chronic urethritis from other causes has been quite beyond question. Thanks to it, that reproach of our out-patient room, the man who uses in succession all the most powerful urethral injections and other methods of treatment that the surgeon is acquainted with, and whose invariable remark is, nevertheless, that he is no better, has practically disappeared. Cases that have been drifting on under this kind of *régime* for months or even years have been cured in a few, even in a single application. At the same time, for the surgeon a new field of interest is opened up in the diagnosis and treatment of a disease that was formerly dull and tedious.

Among the remaining 400 cases the pathological conditions identified were as follows:

Granular urethral patches . . .	239
Simple congestion of mucous membrane . .	83
Intra-urethral ulceration	27
Infiltration (fibrous) of mucous membrane . .	19
Suppuration in Littré's glands . . .	13
Prostatitis	19
	400

The treatment of these cases may be briefly summed up as follows.

To the granular patches, solutions of silver nitrate of varying strengths were applied. It was usual to commence with one of 20 grains to the ounce, and to follow it up at intervals of a week with one of 40 grains, then one of 60 grains, and in very rebellious cases with solutions even stronger. I tried various other solutions, such as those of zinc and copper sulphates, alum and tannic acid, methyl violet, &c., in all kinds of strengths, but soon found that the silver nitrate far surpassed them all in efficacy, and I now use it almost exclusively. For cases of simple congestion silver nitrate was also chiefly used, but in more dilute solution, viz. 5—10 grains to the ounce. For intra-urethral ulceration (or soft sores within the fossa navicularis) most benefit was found from the application of very strong solutions of silver nitrate (ʒj—iij ad ℥j), or even the solid stick, while pure liquefied carbolic acid or a mixture of one part in two of glycerine was used as occasion required. After this a soluble iodoform bougie was introduced twice daily. Induration of the mucous membrane not amounting to actual stricture yielded easily to free dilatation with large bougies, the meatus being, if necessary, incised for the purpose. When the induration had reached the stage where absorption could not thus be produced, intra-urethral incision was had recourse to. Suppuration or persistent inflammation in Littré's glands calls for active treatment on account of the tendency such an affection has to cause the discharge to persist. In most cases it was sufficient to touch the affected spot with a probe on which was fused some nitrate of silver; in others it was necessary first to incise the small swelling with an appropriate fine knife—the blade of Thompson's urethrotome will suffice for the purpose,* —and then to apply the nitrate of silver probe. In cases of prostatitis solutions of nitrate of silver of medium strength were employed, accompanied, of course, by such other general measures as the case demanded. It is worthy of special remark that while this treatment is being carried out great care should be taken that there is no engorgement of the hæmorrhoidal plexus, or intense irritation will be produced. The urine should be rendered as bland as possible by alkalies or other suitable drugs; and if the application produces an aggravation of the discharge, as is likely to be the case for two or three days, it may be met by the injection of warm water or dilute Condy's fluid. The disturbance resulting from the treatment is extremely slight, and the patient need never lie up. In only one of these 400 cases did any untoward event occur: in this case acute epididymitis supervened a week after the application of a 20-grain solution of nitrate of silver, whether *post hoc* or *propter* I will not endeavour to say.

The final results of these cases are extremely encouraging. With the exception of some ten or a dozen cases that are more or less still under treatment, and have been so for a considerable time, a cure has resulted in all the cases. The number of applications required to effect this in each case is interesting, and is as follows:

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* I have since had some knives made specially for this purpose by Messrs. Down Bros., of St. Thomas's Street, Borough.

36	cases, or	9	per cent.,	were cured by	1 application.
89	„ „	22·25	„	„	2 applications.
186	„ „	46·5	„	„	3 „
62	„ „	15·5	„	„	4 „
12	„ „	3	„	„	5 „
15	„ „	3·75	„	required more than 5 applications, and most of them rank as uncured.	
400					

There are many more points of interest that I should like to touch upon, but the space at my disposal does not admit of this. I have tried, by taking the results of practically the whole number of cases treated during a period of five years, to make the results as free from error as possible, and I trust that by so doing I may induce others to have more frequent recourse to what I venture to think is *the* scientific treatment, and the only one at all likely to be uniformly successful in any large number of cases of the affections I have been treating of.

BURSITIS.

By GEORGE LENTHAL CHEATLE, F.R.C.S.

In treating cases of housemaid's knee I have found some were difficult or impossible to cure, and others recurred shortly after recovery.

When the effusion into bursæ with this clinical history has subsided, moveable substances can be felt apparently to slip about inside them; a patient kneeling upon a bursa in this condition must either prevent absorption or cause recurrence.

With this pervading idea I now advise excision of the bursa in all cases of housemaid's knee; such advice if taken, radically cures the affection, and if the operation is carefully carried out no troubles accrue.

I have now excised nine bursæ in unselected cases. Eight out of the nine had adhesions and intra-cystic growths in greater or lesser degrees of development, and the ninth was a simple cyst. The operation is a very simple one, but there are one or two points to which attention might be drawn. The purification of the skin requires great care, hardened and infiltrated with dirt as it often is in these cases.

That the skin can be purified is proved by Mr. Cheyne's recent experiments, and by the fact that by taking proper care in these cases no complication, as regards inoculation, has ever crept into any of these wounds.

In one or two cases a flap was turned up, but a longitudinal incision makes the bursa more accessible and is altogether simpler.

Care should be taken in clearing the posterior wall of the bursa from the front of the knee-joint; it is specially required on either side of the ligamentum patellæ.

In two cases the joint was just opened.

In all cases movement and general conditions are as perfect as before.

To render a clear account of the condition found in these excised bursæ I have had reproduced three photographs.

The uppermost figure is from a bursa (housemaid's knee) laid open along its anterior surface, showing the posterior surface intact. In it are adhesions varying in size and thickness, stretching from the anterior to the posterior surface, and often showing a branched and tangled condition about their centres. In one bursa was a flattened band half an inch wide.

Besides these adhesions are seen intra-cystic growths. On the posterior wall clusters of these growths are congregated together, but on the anterior wall they are not so numerous, and are arranged singly; this is their usual arrangement.

Microscopically these excrescences and adhesions are of fibroid tissue, which is covered by the same shining cellular surface as is the rest of the interior of the sac.

The middle reproduction shows a transverse section of a bursa that had been under my care ten days for acute simple bursitis, the first day of which was the date of onset, the tenth day the time of its excision.

The acute inflammation has now ceased, and resolution has ensued except round the outer parts, where there are still a few small collections of exuded leucocytes.

Organisation of the lymph has definitely begun. It is easily seen that the organisation has begun at the attached extremities of what will eventually be intra-bursal adhesions, and is taking along with it capillaries for their nourishment.

The arrangement of these young adhesions explains the position of old ones observed in simple chronic cystic bursitis. Now some of these adhesions are attached by both extremities to the same surface; this fact is rather difficult to thoroughly explain. The swelling of inflammation will no doubt cause a surface to reduplicate upon itself, and an adhesion may form between these points of contact, as is seen occurring on the lower surface of this photograph.

But when an adhesion starts on one side of a surface and stretches right across the bursa to be attached on the opposite side of the same surface, then there must be some other explanation. An adhesion is seen on the upper (posterior) surface of this particular bursa.

Possibly the explanation can be based on the principle that all young cicatricial tissues tend to contract. This tissue exists in the bursal wall as well as in its cavity; mutual contraction will possibly draw them apart, except where organisation has made the most progress, *i. e.* at the sites of the attachments of adhesions.

The adhesions in this middle photograph have not been subjected to violence, they are too young, and the parts have been kept at rest; so it is very likely that the above intrinsic properties account for the extraordinary appearances.

The centres of these young adhesions show sprouting from them, free in the centre of the cavity, the branched and tangled condition referred to in describing the uppermost figure, so that their existence begins with the formation of the adhesion, and is not entirely due to growth from their irritation.

The lowest figure simply shows an attached extremity of an adhesion under a slightly higher power.

I have felt this condition to exist in bursæ situated elsewhere, but have not been permitted to excise them.

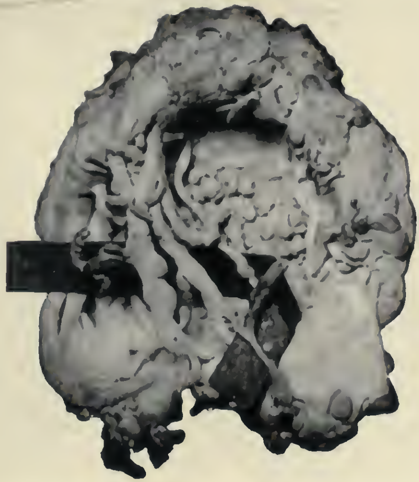
The following classification of bursitis may be useful in showing which of the two kinds I have particularly described:

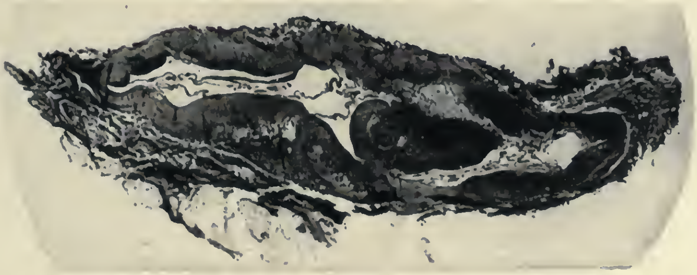
- Bursitis
  - Acute
    - Simple
    - Specific
  - Chronic...............
    - Simple
      - Cystic
      - Fibroid
    - Specific

By a specific bursitis I mean that the inflammation is due to an infection of micro-organisms, such as suppuration or tubercle, or to some unexplained constitutional taint, such as syphilis, and so forth.

A simple bursitis may be the result of a blow or excessive use, but has no infective cause.

The uppermost figure is from a photograph of my own. The two lowest are photographs kindly made by Mr. Pringle from my sections.





THE VALUE OF THE DISCOVERIES OF SIR CHARLES BELL.*

By WILLIAM ALDREN TURNER, M.D.

The great mass of physiological facts, and their bearing upon the activities of the body at our disposal at the present time, make it difficult for us to realise, what was the state of knowledge of the functions of the nervous system at the beginning of the present century, when Bell commenced his work.

The structure and relations of the various portions of this system, but more especially the distribution of the peripheral nerves, had for some time engaged the attention of anatomists. The view that the whole brain was a sensorium, and that the nerves received their impressions from it, and conveyed them to the remoter parts of the body, and that the same nerve transmitted impressions both to and from the brain, was the generally accepted doctrine.

Monro *secundus* had shown by dissection the extraordinary ramifications of the peripheral nerves; and John Hunter had pointed out, that the physiology of this system was probably to be found in a careful study of the origin, union, and reunion of the nerves. "I have no doubt," he says, "if their physiology was sufficiently known, but we should find the distribution and complication of nerves so immediately connected with their particular uses as readily to explain many of those peculiarities for which it is now so difficult to account."* Bell, however, was the first to show that each filament of nervous matter had its peculiar endowment independently of the others, which were bound up along with it; and that it continued to have the same endowment throughout its whole length. If such a filament were injured in any way, sensation and not motion would result, and the perception arising from the impression would be referred to that part of the skin where the remote extremity of the filament was distributed.†

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* Read before the K. C. Medical Society.

The older observers had merely divided the trunk of a peripheral mixed nerve, with the result that both motion and sensation were impaired. But Bell first showed that in the relations of the roots lay the true method of estimating the functions of these structures.

Throughout his work—and this is fully corroborated by a study of his writings—Bell reasoned by inference from anatomical structure and relations, and the experiments upon animals which he performed were merely directed to verify the fundamental principles thus conceived. It has, indeed, been urged that Bell was averse to the vivisection of animals, but he says (p. 378, op. cit.), " I have had recourse to experiments not to form my own opinions, but to impress them upon others. It must be my apology that my utmost efforts of persuasion were lost, while I urged my statements on the ground of anatomy. I have made few experiments; they have been simple and easily performed, and, I hope, are decisive." It is, therefore, seen that Bell, like other pioneers of physiological research, was in the first place an anatomist, but of necessity was forced to perform experiments upon animals in order to test and verify the views which he had conceived.

The functions of the spinal roots.—As I have already incidentally indicated, Bell's most important and best known work lies in the discovery of the functions of the roots of the spinal nerves. This was claimed by the French for Magendie, and a long and acrimonious discussion took place upon the question of priority. It is unnecessary to enter into this, but more profitable to review the chief incidents which led to the discovery.

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* Quoted by Bell, 'Natural System of the Nerves,' foot-note, p. 388.

† Ibid., p. 10.

When Bell came to London in 1804 his name was already known amongst anatomists and surgeons by reason of his work 'A System of Dissections,' published in Edinburgh in 1798. He commenced lecturing on anatomy to artists in 1806, and it was not until six years later, in 1812, that he joined Wilson as Lecturer on Anatomy at the school in Great Windmill Street.*

During this period, as we gather from his correspondence with his brother, George Bell of Edinburgh,† he was reading, working, and thinking much upon the nervous system. The first indication of which there is any record that he has conceived a new idea of the anatomy of the brain, is given in a letter to his brother, November, 1807. He was very sure of the novelty of his discovery, for he writes, "My object is not to publish this, but to lecture it, ... as it is really the only new thing which has appeared in anatomy since the days of Hunter; and, if I make it out, as interesting as the circulation or the doctrine of absorption."

An important letter of March 10th, 1810, gives for the first time some details as to what is this new idea. He writes, "It occurred to me, as there were four grand divisions of the brain, so there were four divisions of the spinal marrow: first, a lateral division; then a division into the fore and back part. Next it occurred to me that all the spinal nerves had, within the sheath of the spinal marrow, two roots,—one from the back part, another from before. . . . . *Exp.* 1.—I opened the spine, and pricked and injured the posterior filaments of the nerves; no motion of the muscles followed. I then touched the anterior divisions, and immediately the parts were convulsed. *Exp.* 2.—I now destroyed the posterior part of the spinal marrow by the point of a needle; no convulsive movement followed. I injured the anterior part, and the animal was convulsed."

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* The Great Windmill Street School was founded by William Hunter in 1768, when he removed from his house in Covent Garden, where he was unable to maintain his class owing to the counter-attractions offered by the actor Garrick at an adjoining theatre. It was used as a school until 1835. The buildings were pulled down in 1886 to make way for the new street from Piccadilly to Holborn, now called Shaftesbury Avenue.—Charles Hawkins, 'Lancet,' September 27th, 1884, and May 15th, 1886.

† Letters selected from his correspondence, London, 1870.

In 1811 he published his conception, in pamphlet form, for private distribution amongst a few friends, under the title of 'Idea of a New Anatomy of the Brain.'* And now the curious fact comes out that for *eleven* years this pamphlet was unknown to the scientific world, and was indeed only first noticed publicly in a paper read before the Medico-Chirurgical Society of London by Mr. John Shaw, Bell's brother-in-law, in April, 1822.† It was not until August of the same year that Magendie's paper was published in the 'Journal de Physiologie expérimental,' on the functions of the nerve-roots.

If we now look a little more carefully at what has just been said, we find that of two statements made by Bell, one is positive, the other negative; the positive being that the anterior part of the spinal cord and the anterior nerve-roots are motor. The same statement is made in 'The Idea of a New Anatomy,' from which I quote:—"On laying bare the roots of the spinal nerves, I found that I could cut across the posterior fasciculus of nerves, which took its origin from the posterior portion of the spinal marrow, without convulsing the muscles of the back; but that on touching the anterior fasciculus with the point of the knife, the muscles of the back were immediately convulsed." Here, again, no definite statement is made as to the functions of the posterior nerve-roots; they are, however, clearly not motor.

After the distribution of this essay, and in virtue of his position as Lecturer on Anatomy, Bell was constantly devoting much time and labour to careful dissections, in the course of which he noted the differences and resemblance between the origin of the cranial and spinal nerves. He saw in the double roots of the fifth nerve a likeness to that which he had observed in the spinal nerves. He saw also that the *portio dura* arose from the anterior part of the medulla oblongata in the same line as the anterior spinal roots. He accordingly performed experiments upon them, but as they are so tersely given in his own words I have no hesitation in quoting them (op. cit., p. 105):—"An ass being thrown and its nostrils confined for a few seconds, so as to make it pant and forcibly dilate the nostrils at each inspiration, the *portio dura* was divided on one side of the head; the motion of the nostril of the same side instantly ceased, while the other nostril continued to expand and contract in unison with the motions of the chest. On the division of the nerve the animal gave no sign of pain. . . . An ass being tied and thrown, the superior maxillary branch of the fifth nerve was exposed. Touching this nerve gave acute pain. It was divided, but no change took place in the motion of the nostril."

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* Reproduced in 'Journ. of Anat. and Physiol.,' vol. iii, p. 147.

† "On Partial Paralysis," 'Med.-Chir. Trans.,' 1822.

As a result of these and other similar experiments, as well as from disease in man, Bell concluded that the *portio dura* was motor, and that the *trigeminus* was chiefly sensory. He, in consequence, repeated his experiments upon the roots of the spinal nerves, and he found, as he had expected, that motor power belonged entirely to the anterior, and sensation to the posterior roots; and he made the general statement that nerves of motion are distinct from those of sensation.

This is the discovery "par excellence" which will perpetuate Bell's fame as a pioneer in physiological investigation. The principle which he thus formulated—that to unravel the complexity of a structure such as the peripheral nervous apparatus, it is essential to investigate the roots of the nerves before they combine to form plexuses—has been largely adopted by physiologists of recent times.

But although the most far-reaching, this is not the only discovery which we owe to the investigations of Bell; for, in addition to the resources of a physiologist, he possessed a philosophic mind. Hence we find, from a perusal of his work, indications of much that is now generally accepted physiological doctrine. For example, there exists in his writings valuable information on the *correlated action of antagonistic muscles*; that is to say, that through the nerves there is established that connection by which muscles combine to one effort, whereby one group "relaxes" while the opposing group contracts.

In the course of his investigations Bell had been struck by the fact that the superior oblique muscle of the eyeball received a special nerve-supply, and he conclusively proved that on closure of the lids an associated upward rolling of the eyeball took place; his explanation of this being that the influence of the fourth nerve was, on certain occasions, to cause a relaxation of the muscle, the eyeball in consequence rolling up under the upper lid.

This is now a well-known clinical fact, and may be seen in a common case of facial paralysis. On asking the patient to close the eyes, the lids on the paralysed side remain stationary, while the globe rolls upwards.

The question of the contraction and relaxation, now more properly called *inhibition*, of opposing muscles, has led to considerable investigation.

Sherrington has lately published interesting experimental facts in connection with this subject. He has shown, for example,* that "during excitation of the cortical areas of the hemisphere, when isolated movements of the pollex and hallux are being initiated, the movement of response obtained is often reversed by section of the peripheral nerves supplying the muscles predominating in the movement obtained. Thus, for instance, flexion can by section of the flexor nerve be converted into extension, or *vice versâ*." But it is more especially in the movements of the muscles of the eyeballs that the correlated action of antagonistic groups may be observed. This investigator has shown that stimulation of the frontal cortex on one side of the brain, after the external rectus muscle of the opposite side has been thrown out of action by division of its nerve, excites movement of both eyes to the opposite side; that is to say, that the excitation which evokes contraction of the internal rectus muscle of one side induces relaxation of that of the opposite side. This and other analogous observations appeared to corroborate Bell's speculations so fully, that I inquired of Sherrington whether he had any experimental evidence on the point to which Bell more especially referred, viz. relaxation of the superior oblique muscle during contraction of the orbicularis palpebrarum. On this, however, he had no special observations, but he adds,* "It was interesting to see that Bell's speculations harmonised with the results one observed; but his belief was rather, I think, toward inhibitory nerves, whereas nothing in my experiment required more than inhibition of one centre by a superior centre."

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* 'Brit. Med. Journ.,' June 10th, 1893.

In these observations we find an instructive corroboration of the views expressed by Bell, but with an important difference. Bell's conception was that certain *nerve-fibres*, instead of transmitting impressions which caused muscular fibres to contract, brought about their relaxation; while, as Sherrington has stated, it is more probable that a *centre* under certain conditions may cause inhibition of adjacent closely connected centres.

The muscular sense.—Bell, moreover, deals very fully with another subject, to which his attention had been directed at an early period, viz. the "muscular sense."

His view was that nerve-filaments, which excited muscles to change their state, also conveyed to the sensorium a sense of the condition of the muscle during activity. He illustrated his proposition by describing the action of the voluntary muscles of the eyeball during a state of watchfulness. He says (op. cit., p. 317), "When an object is seen we employ two senses; there is an impression upon the retina, but we receive also the idea of position or relation, which it is not the office of the retina to give. It is by the consciousness of the degree of effort put upon the voluntary muscles that we know the relative position of an object to ourselves."

A study of the effects of ocular palsies gives ample confirmation of this view; and the condition known as *erroneous projection* is the result of the increased innervation necessary to stimulate a paralysed or paretic ocular muscle. To take a simple example, when we turn our eyes on to an object towards the right, we are aware, from the amount of innervation necessary to contract the muscles, how far towards this side the object lies; and the hand is correctly guided to lay hold of it. But should the right external rectus muscle be paretic, a greater amount of nerve energy is required to contract it, so that the impression conveyed to the mind is, that the object is really further to the right than is actually the case, with the result that on attempting to touch the object the hand goes beyond it.

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* Private communication.

I have been unable to ascertain from Bell's writings whether he regarded the "muscular sense" as a property of the motor nerves, or whether he considered that the filaments of sensory nerves, which are distributed to muscles, convey this impression to the sensorium. He was the first to attribute to muscles a sensibility of their own, and he classified it with the special senses to form a sixth sense.

By means of the "muscular sense" we are enabled to coordinate the several movements of the body and limbs; and by it we are informed as to the position of the limbs during rest and activity. The term, however, is used so loosely that it is difficult in many cases to ascertain its exact meaning. For example, included under this name we find described a sense of position, a sense of movement, and a sense of effort. The term has by some been limited "to denote our appreciation both of movement and of position resulting from movement" (Foster's 'Physiology,' vol. iv, p. 1434); but this seems to be a restricted meaning, because we are undoubtedly aware of the position of our limbs from cutaneous impressions unassociated with movement.

A hemiplegic patient is perfectly cognizant of the position of the paralysed arm, even when the eyes are blindfolded; and the patient who is a victim of acute atrophic poliomyelitis is sensible of the position communicated to his paralysed leg.* After experimental section of the posterior roots of the brachial plexus, the limb, thus rendered anæsthetic, is temporarily at least thrown out of use, although its motor functions are retained. On the other hand, one has observed a monkey accurately localise a small clip, or the prick of a needle upon a limb paralysed as regards movement.

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* Ferrier, 'Brain,' April, 1884.

The evidence, therefore, is in favour of the view that the posterior roots are the means of conveying the sense of position of the limb and movements to the sensorium. In this way it is in close relation and association with the sensory fibres from the skin. It seems impossible, therefore, to adopt Bell's view that the "muscular sense" is a special sense, when we consider that it is unprovided with special end-organs, or even in all probability with special nerves.

The last portion of Bell's work to which I wish to refer is his 'System of Respiratory Nerves.' In his examinations of the brain and spinal marrow he had observed, between the origin of the anterior and posterior spinal roots, a lateral column, which was continued only as far as the upper end of the medulla oblongata. From this column there arose several nerves, which passed to important muscular structures. These nerves were the *portio dura,* the glosso-pharyngeal, the spinal accessory, the phrenic, and external respiratory. He showed that the movements of ordinary quiet respiration were effected chiefly by the intercostal muscles and nerves, which presumably had a connection with the lateral columns of the cord, but that during forced or excited respiratory movements the sterno-mastoid, trapezius, serratus magnus, and the muscles of the face were all brought into action.

But several of these muscles were known to have also a supply of nerves from the anterior or motor columns.

What, then, was the object of this double nerve-supply? It was in order that these muscles might be used for two distinct actions: firstly, for ordinary volitional movements, such as flexion and rotation of the head, elevation and protraction of the shoulder, &c., to accomplish which movements they were innervated from the anterior nerve-roots; and secondly, for the exaggerated movements of forced respiration, whether this is in part voluntary, as happens in running, or wholly instinctive and automatic, for which purposes they received their nerve-supply through the respiratory nerves arising from the lateral columns. This Bell proved by an experiment (p. 214, op. cit.). The spinal accessory nerve was exposed, and excited respiration induced, so as to bring the sterno-mastoids and trapezii into powerful action in combination with the respiratory muscles. The nerve was then divided, and the muscles remained quiet until the animal brought them into action as voluntary muscles.

This is the portion of Bell's work which has found least favour with subsequent physiologists; and the reason seems to be, that in the course of his investigations his attention was so closely absorbed upon the respiratory system that he gave it too great a prominence, and overlooked other and equally important muscular associations. For, as John Reid,* in criticising Bell's observations on this point, pertinently remarks, "it is obvious that if a particular tract of the spinal cord is necessary to carry on the respiratory movements there ought also to have been a defecatory tract, a urinary tract, and so on, to carry on the other sympathetic movements in which a number of distant muscles are engaged in simultaneous action. If the other associated movements can go on without it being necessary that the nerves supplying the muscles engaged in these should come from particular tracts of the spinal cord, then surely there can be no necessity for this in the case of the respiratory nerves. For I believe that it will be found that all the nerves of the body, which can transmit the influence of volition, can also transmit the influence by which the muscles they supply are called into sympathetic action, and that the reason of some muscles being called more frequently into such action than others does not arise from any difference in the nerves supplying these muscles, but from a difference in the circumstances."

This criticism seems to me to be so much to the point, and the suggestion which it contains in accordance with modern views, that it is scarcely necessary for me to indicate a few points which seem to militate against Bell's view.

Firstly, it does not appear that Bell's experiment already quoted is absolutely correct, for John Reid, specially investigating this point, found involuntary movements of respiration in the sterno-mastoid and trapezius muscles after section of the spinal accessory nerve in dogs (p. 152); and secondly, it appears anomalous, and out of harmony with his preconceived idea, that the muscles of the face have only one nerve-supply to innervate them, not only for the movements of forced respiration in association with those of the chest, neck, and back, but also for volitional purposes, as well as for the expression of the emotions.

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* 'Physiological, Pathological, and Anatomical Researches,' Edinburgh, 1848, p. 156.

Notwithstanding this, however, Bell appears to have been upon the right road in his speculations, but throughout he has been more inclined to credit nerves with separate functions rather than the controlling *nerve-centres*, about which, indeed, very little, if anything, was definitely known in his time. Recent investigation appears to show that, although forming one nerve-trunk, the facial nerve receives its individual fibres from three sources : the fibres supplying the orbicularis palpebrarum, or oculo-facial group, coming from the neighbourhood of the oculo-motor nucleus ; the fibres supplying the orbicularis oris, or oro-facial muscles, arising in the sphere of the hypoglossal nucleus ; while the remainder, or mid-facial group, arise in the nucleus of the seventh nerve.

I have endeavoured, necessarily in a brief and somewhat disjointed way, to state certain of the chief facts which we owe to the investigations of Sir Charles Bell, my object having primarily been to throw upon them the light of more recent physiological research. In this way I have tried to show that Bell's observations have paved the way for much that is now well-known physiological doctrine.

CLASSIFIED SUMMARY OF MEDICAL CASES

ADMITTED BETWEEN

OCTOBER 1st, 1893, AND SEPTEMBER 30th, 1894.

PREPARED BY A. WHITFIELD, M.D.,
MEDICAL REGISTRAR.

Abbreviations.—D. Died. C. Cured. R. Relieved. N. R. Not relieved. W. Worse.

I. *Acute Fevers.*

Diphtheria, D. 13, C. 3; with tracheotomy, C. 4.
Measles, D. 2, C. 6, R. 3 (sent to Fever Hospital).
Pertussis, C. 2, R. 4.
Typhoid, D. 6, C. 13.
Rötheln, C. 3.
Erysipelas, D. 1, C. 4.
Influenza, C. 6, R. 1.
Varicella, C. 2.
Parotitis, C. 1.

Total: D. 22, C. 44, R. 8.

II. *Constitutional Diseases.*

Acute rheumatism, D. 1, C. 18, R. 10; chronic, R. 12, N. R. 12.
Gout (acute), C. 1; chronic, R. 2.
Diabetes, R. 5.
Malaria, R. 3.
Lardaceous disease, N. R. 1.

Total: D. 1, C. 19, R. 32, N. R. 13.

III. *Diseases of Respiratory Organs.*

Laryngitis, C. 4, R. 2, N. R. 1.
Bronchitis, D. 2, C. 3, R. 34.
Emphysema, D. 1, R. 15.
Pneumonia, D. 10, C. 21, R. 8.
Gangrene of lung, D. 1, C. 1.
Abscess of lung, D. 1.
Phthisis, D. 14, R. 13, N. R. 9, W. 4.
Pleurisy, D. 1, C. 4, R. 12, N. R. 1.
Total: D. 30, C. 31, R. 84, N. R. 11, W. 4.

IV. *Heart and Blood-vessels.*

Cardiac disease (chronic and acute), D. 20, C. 1, R. 68, N. R. 7.
Ulcerative endocarditis, D. 2, R. 1.
Aneurism, D. 2, R. 1, N. R. 3, W. 1.
Total: D. 24, C. 1, R. 69, N. R. 10, W. 1.

V. *Alimentary Canal and Glands.*

Stomatitis (mercurial), C. 1.
Gastritis, C. 8, R. 19, N. R. 1.
Gastric ulcer, C. 8, R. 5, N. R. 2.
Enteritis, C. 2, R. 5.
Peritonitis, D. 3, C. 1, R. 2.
Intestinal obstruction, C. 1, W. 1.
Typhlitis and perityphlitis, C. 6, R. 3.
Constipation, C. 3, R. 5.
Cirrhosis of liver, D. 4, R. 23, N. R. 2.
Gall-stones, D. 1, R. 1.
Catarrhal jaundice, C. 1.
Abscess of liver, C. 1.
Hydatid, R. 1, operated on.
Total: D. 8, C. 32, R. 64, N. R. 5, W. 1.

VI. *Urinary Organs.*

Nephritis, D. 6, C. 4, R. 36, N. R. 3, W. 2.
Pyelitis, R. 4, N. R. 1.
Cystitis, R. 1.
Total: D. 6, C. 4, R. 41, N. R. 4, W. 2.

VII. *Of Blood and Ductless Glands.*

Anæmia, D. 1, C. 34, R. 1.
Leucocythæmia, R. 1.
Myxœdema, C. 2, R. 1.
Lymphadenoma, R. 1.
Exophthalmic goitre, D. 1.
Total: D. 2, C. 36, R. 4.

VIII. *Diseases of Brain and Spinal Cord.*

Apoplectic seizures, D. 2, R. 3.
Hemiplegia, D. 1, R. 7.
Meningitis, D. 2.
Cerebral and cerebellar tumour and abscess, D. 4, R. 4.
Bulbar paralysis, R. 1.
Chorea, C. 2, R. 12.
Paralysis agitans, R. 1.
Hysteria, R. 9.
Disseminated sclerosis, C. 2, N. R. 1.
Lateral sclerosis, C. 1, N. R. 1.
Tabes dorsalis, R. 2, N. R. 3.
Progressive muscular atrophy, R. 1, N. R. 1.
Myelitis, D. 1, R. 2.
Neuritis, C. 4, R. 7.
Total: D. 10, C. 2, R. 49, N. R. 6.

IX.

Malignant disease, D. 4, C. 5, N. R. 5, W. 8.
General tuberculosis, D. 1.
Total: D. 5, C. 5, N. R. 5, W. 8.

X.

Skin diseases, C. 6, R. 5, N. R. 2.

Number of patients treated			725
,,	,,	cured	187
,,	,,	relieved	358
,,	,,	not relieved	56
,,	,,	worse	16
,,	,,	died	108

NOTES OF MEDICAL CASES.

By A. WHITFIELD, M.D.,
MEDICAL REGISTRAR.

Case 1. *Typhoid fever with hyperpyrexia.*—Alfred O—, æt. 23, admitted into Craven Ward, May 10th, 1894, under Dr. Beale, complaining of feeling giddy and being unable to work.

Occupation.—General labourer, but has done house painting and decorating. A month ago he was engaged for the first time doing sewer work, and continued in this employment until fourteen days ago.

Family history.—Good. No relatives have suffered from gout, rheumatism, or consumption as far as he is aware.

Personal history.—Has had scarlatina, but recovered completely without any symptoms of renal disease. Has only taken very little alcohol. Appetite has always been good, and bowels regular. Never had any venereal disease. Had influenza two years ago, but recovered completely.

History of present attack.—A week ago (May 3rd) he felt difficulty in doing his work, and on the evening of the 4th he complained of aching pains all over his body. He returned to work on the 5th, and the pains left him in about two days. He has felt chilly off and on since the 3rd. For the last few days he has felt severe pain in the eyes and headache, which latter has been worse on movement. He has had no vomiting, and his appetite has been good until four days ago. His bowels have been open after medicine, without pain or anything unusual about the stools. Has been hot and restless at night for the last few nights.

Present condition.—Patient is a fairly well-nourished man. The tongue is large, moist, and flabby, red at the tip and edges, and coated with a whitish fur, through which the papillæ are seen protruding. It is tremulous on protrusion. Appetite is bad; he is suffering from thirst, and his bowels are acting irregularly. Eyes are heavy-looking, and conjunctivæ are suffused. Pulse 108, regular, full, and forcible, not dicrotic. Resp. 28, quiet. Heart and lung sounds normal. On the back there are several spots, and on the abdomen are a few more, but none of them are typical of typhoid fever. The abdomen is tympanitic all over, but is not tender, in spite of which there is gurgling to be felt on palpating the right iliac fossa. Liver not felt, dulness not increased. Spleen not felt, dulness not increased. Urine: sp. gr. 1022, acid, distinct trace of albumen. Temp. 103·6°. Was put to bed, and given a diet of two pints of milk and one pint of beef tea in the twenty-four hours. Temperature soon rose to 104·8°, and he was given five grains of quinine, after which he perspired freely, and his temperature dropped to 102°.

May 11th.—A simple enema produced a light-coloured, constipated motion. Albuminuria more marked. Temp. 104·8°. Quinine five grains.

12th.—No more spots; no abdominal tenderness. Later, temp. 105·4°; was cold-sponged for a quarter of an hour; temp. 103·8°.

13th.—Slight tenderness in splenic and right iliac regions. Temp. 105·4° at 2 p.m. Cold sponging 3.30 p.m.; temperature after 104°. At 6 p.m. temperature rose to 105·8°, and he was given an ice-pack from 6.45 to 7.15 p.m.; temperature after this 102·4°. Simple enema produced an ordinary solid motion. At 11 p.m., temperature having risen to 105·4°, he was cold sponged for a quarter of an hour, and temperature fell to 103°.

14th.—One typical typhoid spot on right iliac fossa. Patient delirious. Temperature ranged between 103° and 103·5° until night, when it rose to 104·2°.

15th.—Another spot by umbilicus. He perspired freely in the night, and passed one very loose motion in bed. Temp. 104·2°.

16th.—Sudamina on abdomen. Slept very little, delirium increased, tongue very dry. Temp. 103·2° to 104·6°. Was given hyoscine hydrobromate gr. $\frac{1}{100}$ with but slight effect.

17th.—More spots. Three loose motions, two of which were quite typical. No sleep last night, very actively delirious, very restless and tremulous. Temp. 104° to 105·4°. Cold sponged for twenty minutes; temperature fell 1·8°.

18th.—Still very delirious; was given hyoscine gr. $\frac{1}{100}$, after which he was quiet. Has difficulty in swallowing food. At 6.20 p.m. his extremities grew cold, and he was nearly pulseless and lips bluish. Strabismus was noticed. Temp. 107·4°. Strychnine was given hypodermically (Liq. Strych. ♏iv and again iv), and he was put into an ice-pack with an ice-bag on his head. Temperature fell to 101·8° in 25 minutes. He was then given ether hypodermically ♏xx, again xx, again xv. Pulse better, swallowing better. Two motions. At 10.30 p.m., temperature being again 106°, he was ice-packed, and temperature fell to 103·8°.

19th.—At 3.30 temperature was 107·6°, and ice-packing again reduced it to 102°. At 7 a.m. he died, with temperature at 104°, which rose to 105° an hour after death.

Post-mortem showed severe typhoid ulceration in the small intestine, with an unusual amount of disease in the solitary glands of the large intestine. There was no perforation.

Case 2. *Typhoid fever with hyperpyrexia.*—Harry H—, æt. 36, admitted into Craven Ward, Monday, September 24th, 1894, under Dr. Beale. Patient complained of pain in head and feeling drowsy.

Occupation.—Employed at the Globe Theatre, not very heavy work.

Family history.—Good.

Personal history.—Has had scarlatina, but not acute rheumatism nor any lung trouble. Drinks a good deal of alcohol, chiefly beer, but some spirits. Always had good health until the last few months, when he has suffered on and off from attacks of diarrhœa. The last attack was last week. He has never passed any blood, and does not suffer with hæmorrhoids. Has been in the habit of getting up to pass water once in the night for the last five years.

History of present attack.—On Saturday night last (September 22nd) he first felt a pain in his head. He had no rigor or general malaise until Sunday (23rd), when he felt very tired and inclined to lie down, on doing which the pain in his head was relieved.

Present condition.—Strong, well-nourished man, of rather alcoholic countenance, *i. e.* somewhat fat and puffy in the face. Tongue furred and white in centre, moist, rather tremulous. Breath very offensive. Conjunctivæ suffused. Appetite has failed since yesterday (23rd); bowels not open since the same time. Pulse 120, regular, fairly forcible, rather full. Heart sounds normal. Lung sounds normal, resp. 28. Nothing to be made out *per abdomen.* Liver and spleen not felt, dulness normal. Urine 1020, acid, no albumen. Temp. 102·6°. Was given Pil. Cal. c̄ Col. gr. x, which produced three loose motions.

September 25th.—Tongue rather more furred. Temp. 103·4°. Has had slight epistaxis, and for a short time had pain in right iliac fossa. Headache easier. No optic neuritis.

27th.—Headache worse again, tongue dirtier, no further action of bowels. Therefore given Cal. gr. v. Later in the day he had more epistaxis. Temp. 103·8°, resp. 24, pulse 100.

28th.—Calomel produced three loose motions. Temp. 104·4°.

29th.—Passed a restless night. Passed one motion typical of typhoid fever. Headache gone. Temp. 104·6°.

30th.—Bad night, perspired a good deal. More epistaxis. Splenic dulness increased. Temp. 104·4°. Three motions.

October 1st.—Has a patch of white exudation on right side of soft palate and left side of uvula. Troublesome cough. Lungs clear. There are two spots like those of typhoid on the abdomen. Temp. 104·6°. Four motions.

2nd.—Bad night. Perspired profusely. Slightly delirious. More spots out, more epistaxis. Tongue brown and rather dry. Urine contains a distinct trace of albumen. Temp. 103·2° to 104·8°. Eight motions.

3rd.—Fair night. Slept heavily. Some delirium. Still epistaxis. More spots. Temp. 102°—104°; pulse dicrotic, 120; resp. 38. Ten motions.

4th.—Very tremulous. More spots. Tongue cleaner. Still epistaxis. Nine motions. Temp. 104·8°.

5th.—Slept heavily till 2 a.m., then became very noisy. Very tremulous all over. Tongue dry and brown. Air not entering well at base of right lung. Resp. 48, pulse 124, temp. 102°—103°. Spleen not felt below ribs. Urine sp. gr. 1022, distinct trace of albumen. Three motions.

6th.—Was given Liq. Strychninæ ♏iij hypodermically at 3 a.m. and at 8.30 a.m. Not so restless, dozed a good deal, perspired profusely. More spots. Tongue dry and brown. Pulse irregular. Complains of abdominal tenderness. Movements not so tremulous.

7th.—Liq. Strychninæ ♏iij at 5 p.m. yesterday and at 4.30 a.m. to-day. Bad night, no sleep. Carphology often noticed. Lungs clearer. Fourteen motions in night, so was given Pulv. Ipecac. Co. and starch in an enema at 12.30 p.m. Tongue rather more moist. Pulse small but fairly regular. Liq. Strych. ♏iij at 1 p.m. Temp. 102°—103°.

8th.—Liq. Strych. ♏iij at 7.45 a.m. Ice to abdomen for one hour. Slept heavily all night. Went a very bad colour at times; pulse very bad all through the night. Pulse and heart's action as heard by stethoscope very weak. Patient seems weaker and more tremulous,—in fact, more exhausted in every way. Sick twice this morning; lies with his legs drawn up. Inject. Morph. Hypod. ♏iij administered at 8 p.m. Temp. 103°—100°. Still taking food well. Pulse 140, resp. 28.

9th.—Has had a very bad night, perspired profusely. Had 120 grs. of bromide of potassium during the night with some Liq. Strychninæ, after which his pulse improved and his mental symptoms quieted down. At 2 p.m. temperature rose suddenly to 106·4°, and he was cold sponged. 4 p.m., temperature lowered to 102°, but he has become unable to swallow. 6 p.m., abdomen very tumid. Temperature rose to 106·4°, and he sank and died. No autopsy allowed.

This case shows marked similarity with that of Alfred O— above described.

Case 3. *Diphtheria; tracheotomy; recovery.*—Annie E. T—, æt. 4, admitted under Dr. Duffin in Twining Ward, January 28th, 1894. Complains of sore throat.

Family history.—One sister died of diphtheria fourteen days ago, and another child in the same house died of it also.

Personal history.—Measles three years ago, after which she had abscess in head, neck, and behind ears. Whooping-cough at Christmas, and has never properly recovered.

History of present attack.—Was taken ill on Monday (Jan. 22nd) with a bad cold and sore throat, and was treated outside and did well, but got worse on Thursday, and cough became croupy on Friday. Breathing became very bad to-day.

Present condition.—Well-nourished child. Tongue slightly furred. Sick after food, bowels confined. Throat swollen and covered with membrane. Lips very blue, breathing very stridulous. Marked sucking in of lower ribs, and of supra-clavicular spaces. No dulness over chest. Very little air entering. Urine 1028, no albumen. 4.30 p.m., tracheotomy was performed with immediate relief. Was given Vin. Ipecac., ♏ij; Liq. Ammon. Acet., ʒss; Ammon. Carb., gr. j; Mist. Chlorof., ad ʒij; quaque 3tia hora.

January 29th.—Trace of albumen in the urine.

31st.—More albuminuria. Child breathes quietly through the tube, and looks generally better.

February 1st.—Child perspiring freely. Coughs occasionally. Sleeps a great deal.

2nd.—Cough still croupy. Pulse better. The tube was changed whilst the child slept.

3rd.—Child awake, and taking notice of people. Resp. 30, pulse 120, good tension and regular. No albuminuria.

4th.—Double tube changed for silver flexible. Breathes through mouth when tube is stopped for a short time.

5th.—Child worse, but on cleaning tube it was found to be partially obstructed by membrane, which was removed and the tube returned.

6th.—Child had a fit of dyspnœa and cyanosis whilst tube was being changed.

7th.—Right knee-jerk less active than left. Albuminuria.

9th.—Still trace of albumen.

10th.—Tube stopped for seven minutes without producing dyspnœa.

11th.—Urine, no albumen.

16th.—Tube out. Wide awake and talkative. Breathing easily. Sleeps well. Heart beats well, but is occasionally intermittent. No paralysis.

From this date convalescence proceeded uninterruptedly.

Case 4. *Diphtheritic paralysis* (vol. cix, p. 192).—George D—, æt. 14. Admitted into Sambrooke Ward under Dr. Duffin, June 7th, 1894. Complains of weakness in legs and pain.

Family history.—Good.

Personal history.—Had measles four years ago and scarlatina some time before that, does not know exactly the date. No rheumatic history. Had diphtheria three months ago, and was laid up for five weeks with it. Has always been afflicted with a squint.

History of present attack.—When he recovered from the diphtheria and began to get about he found himself very weak on his legs. He did not gain strength in them at all, and was obliged to walk with a stick. He also lost sensation in both hands and wrists and the back of his neck, and legs as high up as the middle of the thighs. Walking gave him pain in both legs, and especially in the right. The pain was situated in the calves. He has also been unable to read owing to a mistiness of vision, the left eye being worse than the right. His food has regurgitated through his nose, but that is not so now. Has lately suffered from neuralgic pain in left temple.

Present condition.—Small, not well-nourished boy, face rather flushed. Marked internal squint of left eye. The soft palate rises badly in phonation, giving a nasal quality to the voice. Tongue clean, appetite good, bowels regular.

Pulse 90, soft and regular. Heart and lung sounds normal. Liver and spleen seem normal. Urine 1016, acid, no albumen. Arms: hand grasps are fair and nearly equal. He can throw back wrists well. Sensation to touch and pain is good. Legs: both knee-jerks and plantar reflexes are lost, cremasteric reflexes present. Some loss of power in muscles of legs, especially in dorsal flexion of foot. Sensation to touch and pain seems good in legs and feet.

Measurements.—Round biceps of arms 6¼ inches both sides; round forearms 7 inches right, 6¾ inches left; round thighs 12⅛ inches right, 12 inches left; calves 9 inches both right and left.

Muscles of calves and anterior tibial groups somewhat flabby, no reaction of degeneration. Eyes: pupils react to light and accommodation. Squint is independent. Cannot read small print, as he holds the book too far off in his efforts to focus it. Was given Ferri Sulph. gr. ij, Tr. Nucis Vom. ♏v, Aq. Chlorof. ad ℥j, t. d. s., and the mild faradic current ordered to legs and massage.

June 27th.—Greatly improved, walks much better but still unsteady. Palate acts much better, voice much less nasal.

July 4th.—Walks better, still no knee-jerk.

18th.—Walks well. Voice quite clear now. No pain anywhere. Sent to Convalescent Home.

Case 5. *Aortic aneurism which ruptured externally.*—Edward L—, æt. 53, admitted in Craven Ward under Dr. Tirard, April 5th, 1894.

Patient complained of swelling of front of chest and cough. Occupation labourer, and has done heavy work all his life.

Family history.—Unimportant.

Personal history.—Married; his wife has had sixteen children, fourteen of whom are living. He has drunk a good deal of beer, sometimes as much as ten pints a day. He has never had any severe illness or any venereal disease.

History of present illness.—About four and a half years ago he caught cold while at his work, and noticed soon afterwards a sharp pricking pain in the front of his chest when he did heavy work, especially if he had his hands above his head. Later on this pain used to worry him at night when he was lying down. He gradually became short of breath, and was admitted into Winchester Hospital in July, 1891, and remained there until September, 1891. He states that while there a small pulsating tumour was noticed in the middle line in the same place as the present swelling. From that time until March 22nd, 1894, he has been going on with his work, and the tumour has been gradually increasing in size. On March 22nd, 1894, he was obliged to give up work, and the skin over the swelling became black. The swelling seemed then to get a little smaller, but when he coughed he noticed that the edges of the skin surrounding the blackened area used to bleed. He has suffered for years from a winter cough, but lately it has been getting much worse, and the expectoration has become more profuse, and occasionally blood-stained. He has never become hoarse, nor lost his voice. He does not sweat at night, but he has lost a good deal of flesh lately. He has suffered much pain in the upper part of his spine lately.

Present condition.—Rather thin and weather-beaten man. Tongue pale and dirty. Appetite fair. Bowels fairly regular. Pulse 80, equal in the two radial arteries, which are slightly thickened. There is a large swelling of about the size of a teacup standing prominently out from the chest wall in the middle line in front of the sternum from the second to the fourth rib. There is a gangrenous patch, about the size of a five-shilling piece, in the centre of the skin covering the swelling, and the edges of the skin where separation of the slough is taking place are raw and bleeding. The swelling pulsates with a definitely expansile pulsation, synchronously with the heart's beat. The superficial veins about the clavicle are slightly larger on the left side than on the right. All round the base of the tumour there is dulness on percussion for about an inch, rather more on the right side than on the left. Heart: apex-beat diffuse, apparently in the sixth space, just internal to the nipple line. There is a soft diastolic murmur to be heard at the apex, and a soft systolic at the right side near the tumour. At the base the second sounds appear clear. Chest: expansion bad. There seems to be a great deal more air entering on the right side than on the left, and the voice-sounds are much louder on the right side. Tracheal breathing is heard down the spine to the sixth dorsal vertebra. There is no spinal tenderness and no murmur heard behind. There is no tracheal tugging. Liver and spleen apparently normal. Sputum, frothy mucus. Cough paroxysmal and distressing. Urine 1012, acid, no albumen or sugar.

April 6th.—He had a very bad night, being kept awake with continual coughing, and brought up some sputum which was considerably stained with blood.

7th.—A good deal of hæmorrhage from the skin. Patient seems better and quieter. He passed a better night.

9th.—Slept well until 5.30 a.m., when he woke up, coughed, and turned half over, when he was observed to suddenly fall back, and blood poured out from under the dressing on the gangrenous patch, and he became unconscious and died shortly after.

Post-mortem.—Heart normal but pushed downwards and a little to the left. Pericardium normal. Lungs normal except that on each side the upper lobe was adherent to the outer side of the aneurism, and rather compressed.

The first part of the aortic arch was bulging towards the right and elongated. Its lining was extremely atheromatous.

The mouth of the aneurismal sac, which was 3 inches in diameter, occupied the position of the front wall of the middle part of the aortic arch. The three arteries which arise there were in their normal relative positions, but were pressed backwards by the upper part of the sac, and their orifices were narrowed by atheroma. The sac reached upwards nearly as high as the top of the manubrium sterni, and downwards to within one inch of the base of the ensiform cartilage. Midway between these two points there was a hole, the size of a florin, in the centre of the sternum, and through this hole the false sac had bulged to produce the swelling noticed during life. The inner surface of the sternum all round the hole was eroded; the portion of the sac inside the chest was about the size of a cocoa-nut. Rupture had occurred at the most prominent part of the extra-sternal bulge. The left innominate vein and left recurrent were not found. Apparently they were lost in the sac wall. The trachea and œsophagus showed scarcely any signs of pressure.

Abdominal organs normal except a small cyst in one kidney. Abdominal aorta very atheromatous.

Case 6. *Ulcerative endocarditis secondary to acute rheumatism.*—Albert Donald A—, æt. 21, admitted into Sambrooke Ward under Dr. Duffin November 15th, 1893. Patient complains of pain in the joints, shortness of breath, and general weakness. Occupation, lathe-work in Woolwich Arsenal, always standing.

Family history.—Mother died of lung disease, otherwise good.

Personal history.—Patient had acute rheumatism in February, 1892, and was laid up eight weeks. He made a satisfactory recovery and played football all last season. Last August he suffered with headache, pain in the back, shortness of breath, and faintness. He tried to continue his work, but was obliged to give up in September and stayed at home. Has been a teetotaler for years.

History of present attack.—On November 8th he was attacked with pains in the joints, and felt very ill. He therefore took to his bed for a few days, and then came to the Hospital. He believes that he has had "another touch of rheumatism, and is now getting over it."

Present condition.—Thin, pale, and anæmic man. Lips bluish. Tongue large, flabby, and slightly furred. Appetite bad. Bowels constipated. Pulse 63, regular in force and frequency; full, low tension, and collapsing. Capillary pulsation in lips. Heart: apex-beat diffuse and in the fourth space in nipple line. Dulness begins at third rib, and extends inwards slightly to the right of the mid-sternal line. Loud systolic and diastolic at the base, systolic at apex, softer in quantity and traceable round to axilla. Liver and spleen apparently normal. Finger-nails very pale and bluish in tint. Left foot and ankle tender, were swollen last week. Has been deaf in left ear since rheumatism of 1892, and is now deaf in right also since the recent attack. Urine 1020, acid, deposits urates, contains no albumen. Temp. 103·3°.

November 17th.—Liver felt below costal margin.

18th.—Urine 1008, no albumen. The heart's apex is now in the fifth space. Probably the displacement on admission was due to distension of the stomach.

22nd.—Pains in phalangeal joints of hands and knees. Temp. 103·5°. Mist. Quininæ Alkalinæ, ℥j; quaque 4ta hora.

December 6th.—Pains worse. Frictions, dulness, and loss of breath-sounds at left base. ℞ Sod. Salicyl., gr. xv; Aquæ ad ℥j: t. d. s.

9th.—Dulness at left base clearing. Splenic dulness increased.

January 3rd.—Wrist-joint swollen; much effusion, but no pain.

6th.—Losing weight. Heart shows no signs of hypertrophy. Temp. 98·4°. Given Liq. Arsenicalis, ♏v; Ferri et Ammon. Cit., gr. x; Aquæ Chlorof., ad ℥j: t. d. s.

14th.—Crepitant frictions, and crepitations with dulness and loss of breath-sounds at left base again.

17th.—Marked leucocytosis, 66 red to 1 white corpuscle. Temp. 103·4°. Diastolic murmur scarcely audible. Given Liq. Arsenicalis, ♏xv, four times a day.

23rd.—Urine contains a trace of albumen. Spleen felt below ribs. Was sick this morning. Left base clearing again; murmurs entirely gone at base, systolic at apex only.

29th.—Spleen rapidly increasing in size, and very tender.

30th.—Pulse 134; breathing 35. Anæmia now most intense. Heart increasing towards the right and upwards. Now he is to take ♏xxv of Liq. Arsenic. every six hours. Basal murmurs have reappeared.

February 3rd.—Temperature coming down. Taking food badly. Arsenic stopped. Still albuminuria.

14th.—Convulsive attack of left side last night. Very weak this morning.

Death on February 15th.

Post-mortem.—Heart large, soft vegetations and perforations of mitral valve. Smaller vegetations on semilunar aortic valves. Spleen and kidney showed many large infarcts. Intestine showed signs of some hæmorrhages.

Case 7. *Subacute rheumatism with pericarditis* (vol. cix, p. 186).—Alfred W—, æt. 15, admitted into Sambrooke Ward under Dr. Duffin, May 31st, 1894. Complains of swelling and pain in ankles and knees.

Occupation.—Messenger-boy.

Family history.—Father has suffered with rheumatism, otherwise family history is good.

Personal history.—Patient is subject to attacks of tonsillitis. Five or six years ago he was admitted into Pantia Ralli Ward with acute rheumatism. He made a good recovery, but since that time he has always suffered from dyspnœa on exertion, and of course he has a great deal of walking and running in his occupation, as well as exposure. He has for the last few years suffered with winter cough, which, however, always leaves him in the summer.

History of present illness.—He first felt ill on Monday (28th), when he was attacked with pains in the legs and left arm; on Tuesday he again got wet through, and on Wednesday he left his work at midday and went to bed, where he stayed till he came here.

Present condition.—Thin, poorly nourished boy; face pale. Tongue moist, with blanket-like white fur; appetite lost, bowels regular. Temp. 100° F. Pulse 80, full, regular, soft and fairly forcible. Heart: præcordial dulness normal, apex-beat in fifth interspace quarter of an inch internal to nipple and one and three quarter inches below. No murmurs to be heard. Chest pigeon-breasted. Lung sounds normal. Tonsils rather larger than normal. Liver and spleen normal. Joints: left knee and both ankles slightly swollen, very tender on pressure or movement. Slight effusion to be detected in them. Skin perspiring freely, acid smell.

May 31st.—℞ Sodii Salicyl. gr. x, Aquæ ad ℥j: quaque 4ta hora.

June 1st.—℞ Mist. Quin. Alkalinæ ℥j: t. d. s. Joint pains gone and temperature normal.

2nd.—Slight reduplication of second sound; marked accentuation of pulmonary second sound. Systolic murmur at apex conducted into axilla. Urine, sp. gr. 1020, acid, no albumen. Temperature rising again slightly.

5th.—Erythematous rash over chest and abdomen, most marked on left side of chest; leaves a yellow stain on pressure. Cardiac dulness increased upwards and a little over towards the right. Loud frictions heard and fremitus to be felt almost all over the cardiac area. Patient complains of præcordial pain. Pulse 60, regular and soft. Lungs normal.

6th.—Leeches applied to præcordia; great relief ensued. Pulse 80, regular, and somewhat stronger. Signs unaltered.

10th.—Frictions are scarcely audible, cardiac dulness nearly normal. Temp. 98·4°. No pain.

14th.—Auscultatory signs, simple systolic at apex. Dulness normal. Getting stronger.

20th.—Completely convalescent; put on quinine and iron tonics.

The case convalesced without any further symptoms, and was discharged cured except for the mitral incompetence.

CASE 8. *Mitral and tricuspid regurgitation with thrombosis* (vol. vi, p. 76).—William A. C—, æt. 15, admitted into Cheere Ward under Dr. Curnow on April 3rd, 1894. Complained of pain and swelling of legs.

Family history.—Father has suffered with acute rheumatism.

Personal history.—He has never had any illness except rheumatism, which he never remembers being without. At various times he has been treated for pains all over him, but has never been laid up before. His legs have often been swollen in his previous attacks. Until nine years old he could run about quite well, but has been unable to since then.

History of present attack.—About four weeks ago patient's feet began to swell. The swelling then gradually increased and spread up the legs to the abdomen, the swelling being so great as to prevent buttoning his trousers. His hands and face then also swelled up, especially his eyelids in the morning. Patient had no pain with the swelling, and has had none since. He has had a cough and his breath has been very short, and he has had several fainting attacks lately.

Present condition.—Well-nourished boy. Face flushed and cyanosed; lips blue; conjunctivæ yellowish. Tongue clean; appetite bad; bowels open. Pulse 90, irregular both in force and frequency, low tension and small. Heart: apex-beat diffuse and heaving in the fifth space, one and a half inches outside the nipple line. Marked thrill to be felt at the apex, which seems to begin before the systole of the ventricle, and lasts right through it. Dulness reaches as high as the third space and as far as half an inch to the right side of the edge of the sternum. Heart sounds: loud systolic heard all over chest, and especially loud in the axilla, and at angle of left scapula behind. Distinct presystolic, though quieter than the systolic. Second sound very loud and reduplicated over pulmonary area. Loud systolic bruit also at ensiform cartilage. Veins in neck pulsate and fill from below. Lungs: in front rhonchi and sibili, behind crepitations at both bases with distant breath and voice sounds heard up to the angles of the scapulæ. Liver can be felt easily; the edge is about an inch below the umbilicus. It is tender on handling. Spleen not enlarged. No ascites can be found. Legs very œdematous. Back œdematous up to eighth rib. Urine acid, 1030, distinct trace of albumen.

April 10th.—Œdema has gone down slightly. Patient suffers greatly from insomnia.

18th.—More œdema. Signs of fluid in peritoneum. Breathing very laboured.

May 5th.—Thrombosis of right jugular vein. Right arm very œdematous.

7th.—A large blister has formed on the penis. The legs have been tapped. The right arm is very tender and red in neighbourhood of axillary vein.

8th.—Left arm also œdematous. Great pain in right arm.

10th.—Much weaker. Ascites collecting rapidly. Breathing heavily.

14th.—Œdema gone down in arms, though right is still very red. Extremely exhausted.

Two days later he sank and died of exhaustion.

The post-mortem conditions were those of mitral and tricuspid regurgitation (*vide* P.M. Book v, p. 116).

Case 9. *Valvular disease of both apertures of the left heart with marked gastric symptoms.*—Jane B—, æt. 43, admitted into Todd Ward under Dr. Yeo, July 12th, 1894. Patient complains of pain in the chest after food, vomiting, and palpitation of the heart.

Occupation.—Housework.

Family history.—Father, two brothers, and two sisters died of phthisis. No history of other disease.

Personal history.—Married, and has had two children and one miscarriage eighteen months ago. Appetite never good, but bowels always regular. Had acute rheumatism ten years ago. Suffers from "winter cough."

History of present attack.—On Monday (July 2nd) she had diarrhœa, which lasted a day or two and then ceased. On Tuesday (3rd) she vomited after food, and describes the vomit as "slimy and watery." The sickness came on about half an hour after food, and was accompanied by sharp pain in the chest. This vomiting has continued up to the present.

Present condition.—Well-nourished woman, face rather puffy, especially beneath the eyes. No marked anæmia. Appetite bad, bowels regular. Tongue moist and clean. Pulse 74, regular in force and frequency, moderately large and forcible, tension low. Arterial wall not thickened. Heart: cardiac dulness reaches up somewhat above the fourth rib. Dulness also extends to the right of the sternum. Apex-beat in fifth intercostal space in the nipple line, and is diffuse. The action is forcible and heaving, and can be seen all over the cardiac area. There is a distinct presystolic thrill to be felt at the apex. Loud presystolic and systolic murmurs are to be heard at the apex. The presystolic is localised, but the systolic may be heard in the axilla and at the angle of the left scapula. Over the third right costal cartilage there is a loud and very harsh systolic murmur, traceable up to the great vessels of the neck; the second sound is with difficulty heard. Over the third left intercostal space there is a long blowing diastolic murmur, and this is the only place in the cardiac area where it can be definitely made out. There is a curious thrill to be felt here. There is marked pulsation in the large vessels in the neck, and also in the capillaries of the lips. Lung sounds normal. Nothing to be made out *per abdomen.* Liver and spleen apparently normal. Legs are slightly œdematous. Urine 1012, acid, no albumen. Patient was given a mixture containing bicarbonate of soda and sal-volatile, and put on a light, chiefly liquid diet, and a belladonna plaster was placed over the heart.

July 14th.—Sick twice.

16th.—Much relief from plaster. Still vomits occasionally.

18th.—Suffered a good deal from insomnia and pain, so was given occasional doses of paraldehyde.

27th.—Much improved. Sickness stopped entirely since the 19th. No pain, so was allowed to go home.

CASE 10. *Fatty degeneration of the heart with marked dyspnœa.*—William B—, æt. 60, admitted into Craven Ward January 9th, 1894, under Dr. Beale. Patient complained of shortness of breath, faintness, and palpitation of heart.

Occupation.—Works as a labourer for the Poplar Board of Works. Has done a good deal of heavy work.

Family history.—Good in every respect.

Personal history.—No history of venereal or other disease. Alcohol strictly moderate, no spirits. Appetite always good and bowels regular.

History of present attack.—Patient was quite well until seven weeks ago, when one day on shovelling up some heavy stones he suddenly felt a curious "tumbling sensation" at his heart, and became very much out of breath. He went to a doctor and improved under treatment. He left off work for a week, at the end of which time he went back again for about a month. During the whole of this time, however, he felt occasionally very short of breath and suffered from palpitations. Has left off work since Christmas.

Present condition.—Well nourished,—in fact, rather stout and plethoric-looking man, of somewhat cyanotic colour. Tongue large, moist, tremulous, and covered with a thin yellowish fur, and somewhat marked by the teeth. Appetite bad. Bowels irregular. Pulse 85, irregular in force and frequency. Sometimes definitely intermittent, tension high. Artery is not felt to be thickened at wrist. Heart: apex-beat imperceptible, but a general diffuse and very weak impulse. Dulness reaches nearly to third rib. No thrills or murmurs, but the first sound has lost much of its muscular quality, and is valvular in tone. Chest expansion bad, resonant to percussion all over, except at bases. Breath-sounds weak, expiration prolonged and scattered, mucous râles are to be heard all over, with crepitations at both bases. Vocal resonance and fremitus normal all over except at bases, where both are diminished. Patient cannot breathe comfortably unless sitting up. No cough. Liver dulness increased, but organ is not felt. Spleen dulness normal. Legs not œdematous. Urine 1018, acid, marked trace of albumen. Was put on digitalis and stimulants. Temp. 97·2°.

January 11th.—Dulness more marked at right base.

12th.—Sick this morning. Temp. 99·8°.

15th.—Urine contains more albumen; sp. gr. 1024, very acid.

17th.—A needle was put into right pleura, and a sample of clear fluid obtained.

18th.—Occasional murmur to be heard at fourth intercostal space, two inches to the left of the middle line.

22nd.—Urine 1024, less albumen. Passes rather more of it, now 32 oz.

26th.—Urine 1020, much less albumen, 37 oz. passed. Still complains of attacks of intense dyspnœa. Becomes very blue.

February 13th.—Urine 1022, still a trace of albumen. Seems slightly better.

15th.—Systolic murmur heard at apex.

20th.—Some hæmoptysis. Very sleepless. Given sulphonal gr. xx.

27th.—More albumen in urine. More dyspnœa.

March 4th.—Right pleura aspirated, 44 oz. taken away.

8th.—Murmur reappeared at apex. Liver is now quite two and a half inches below ribs.

16th.—Œdema of back and both feet. Urine contains more albumen. Right pleura aspirated, 48 oz. drawn off.

24th.—Right pleura aspirated, 38 oz. drawn off. Still very orthopnœic.

April 2nd.—Better altogether. Breathing easier. Less albuminuria.

13th.—Right pleura aspirated, 46 oz. drawn off.

28th.—Aspirated again, right side, 52 oz.

May 5th.—Aspirated right side, 32 oz., slight rub and whiffing breathing at right base. Occasional 30-gr. doses of jalap and scammony ordered.

June 5th.—Urine 1014, less albumen. Condition generally better, but temperature is always subnormal.

July 1st.—Aspirated right pleura, 53 oz.

10th.—Urine: no albumen, sp. gr. 1010, daily average 50—60 oz.

19th.—Steadily improving. Dyspnœa much less.

31st.—Urine 1020; trace of albumen.

August 7th.—Much better. No albuminuria. No dyspnœa. Purgation with jalap and scammony powders ceased.

28th.—Seems quite bright. No dyspnœa. No return of any bad symptoms.

31st.—Discharged much relieved, but cautioned not to do any work for some time, and then only very light.

Case 11. *Case of marked anæmia with recovery* (vol. vi, p. 70).—William M—, æt. 47, admitted into Cheere Ward under Dr. Curnow, March 21st, 1894. Complains of shortness of breath and weakness.

Occupation.—Works at furnaces; no lead.

Family history.—Father died of paralysis, mother died insane; two sisters died of heart disease.

Personal history.—Always healthy; married. No memory of any illness till four years ago, when he went to Moorfields for his eyes, and was given some medicine as well as glasses. Soon after he noticed he was of a peculiar yellowish colour, and was told he was suffering with jaundice, but feeling quite well he paid no further attention to it, and so is unable to state quite exactly when it first started. He has never drunk much, and only beer; never had any venereal disease. No malaria.

History of present attack.—Twelve months ago he first began to feel ill, with weakness, cough, and shortness of breath. Three months after this he had to give up work. In June last year he fell down while he was arranging some bricks on a hot day, and he thinks he fainted. After this he vomited constantly, and his appetite fell off. He had one slight remission while attending here as an out-patient, and went back to work, but had to give up again. Once last week he was attacked suddenly with violent pain and retching without any known cause. Attack did not come on after food.

Present condition.—Rather fat man; skin very dark and yellowish coloured; conjunctivæ pearly white. Tongue not quite clean, appetite poor; bowels fairly regular. Pulse 86, soft and weak. Arterial wall slightly thickened. Heart: marked epigastric pulsation. Very loud systolic murmur heard all over the cardiac area, but especially over the pulmonary area. Lung expansion fair. Occasional fine crepitation or friction over left base. Liver dulness begins at sixth space, and the edge of the liver can be easily made out about one inch above the umbilicus; it is smooth and not tender. Spleen apparently not enlarged. Blood: hæmoglobin 20 per cent., red corpuscles 24 per cent.; the red corpuscles vary much in size and shape; white corpuscles in proportion of 1 to 26 red. Urine 1020, acid, no albumen. Temp. 98·1°. Given first Acid. Hydrocy. Dil., ♏ij; Sod. Bicarb., gr. x; Mist. Bismuth., ad ℥j: t. d. s.

March 27th.—Temperature oscillates between 98° and 100°. Sickness better, but bowels are very constipated. Given Mag. Sulph., ʒij; Tr. Belladonnæ, ♏xv; Aq. Chlorof., ad ℥j: t. d. s.

31st.—Gastro-intestinal symptoms having been allayed, he was given Liq. Arsenic., ♏iij; Tinct. Card. Co., ʒj; Aq., ad ℥j: t. d. s., p. c.

April 7th.—Medicine changed to Acid. Arsenios., gr. $\frac{1}{40}$, Ferri Redacti, gr. iii, in pil. four times a day.

14th.—In addition, was given, as constipation was returning, Sod. Sulph., ʒiss; Sod. Chlor., gr. x; Sod. Bicarb., gr. xx, before breakfast.

25th.—Blood: chromocytes 29 per cent., hæmoglobin 30 per cent.

May 4th.—Blood: chromocytes show marked poikilocytosis and some nucleated cells. Leucocytes excessive in percentage, and also in total amount.

8th.—Urine 1022, no albumen. Seems to be getting better.

18th.—Chromocytes 43 per cent. Hæmoglobin 50 per cent. Patient still very short of breath, but is improving. Strong garlic-like odour round patient, independent of food.

22nd.—Chromocytes 35 per cent., hæmoglobin 41 per cent.

June 6th.—Chromocytes 45 per cent., hæmoglobin 53 per cent.

26th.—Chromocytes 61·5 per cent., hæmoglobin 58 per cent.

July 4th.—Patient wished very much to leave hospital, and so was sent to convalescent home.

Case 12. *Croupous pneumonia with marked delirium after alcoholic excess.*—Joseph E—, æt. 29, admitted under Dr. Yeo in Sambrooke Ward, July 9th, 1894. Patient complained of pain in the side.

Occupation.—Labourer.

Family history.—Mother died of bronchitis, otherwise all relations healthy.

Personal history.—Single man, but never suffered with any venereal disease. Has always been healthy, and is usually a moderate drinker. Last week, however, he had a great excess of alcohol. Has always suffered with morning sickness after an occasional drinking bout.

History of present attack.—Last Monday (July 2nd) he had a shivering fit, and was attacked with pain in the left side, just external to the nipple. The pain was increased by coughing or taking a deep breath. He had to give up work, and the pain lasted all through week, varying in severity. On Saturday (7th) he went to a bean-feast, and the pain in the side has been much worse since. Yesterday he coughed a great deal and shivered all day.

Present condition.—A well-nourished man, face very flushed. Tongue covered with a light brownish fur. Appetite bad and bowels constipated. Pulse 104, full and bounding. Heart-sounds normal. Chest expansion very bad. Percussion note high-pitched everywhere, except under left axilla, where there is dulness, tubular breathing, bronchophony, a few crepitations, and many fine frictions. Coughs a good deal and brings up some very rusty and tenacious sputum. Respirations 24. Liver and spleen: dulness normal, organs not felt. Temp. 103°. Urine, sp. gr. 1010, acid, trace of albumen, no blood, chlorides much diminished.

July 10th.—Temperature at 6 p.m. 105·6°. Resp. 24. Pulse 100. Was given Quin. Sulph. gr. x. Temperature at 2 a.m. was 103°.

11th.—Delirious at 2 p.m.

12th.—Urine 1012. Albumen, a trace still. Delirium very noisy. Temp. 102·6°—103·8°.

13th.—Delirium very noisy. Was given hyoscine gr. $\frac{1}{100}$, which quieted him considerably. Temperature range 103·8°—101·8°.

14th.—Again very delirious. Pulse very weak; had ℥vij of brandy during the night. The solidity of the lung has spread round to the left base. Still albuminuria. Temp. 103°.

15th.—Delirium has ceased. Temperature fell suddenly to 98·4°, and then rose to 100·4° again, and is now oscillating between 98·4° and 100°. Pulse 100. Resp. 36.

18th.—Temperature normal. Patient very weak, but calm and rational. Urine 1014, acid, no albumen.

21st.—Does not sleep well. Was given sulphonal gr. xx, which procured sleep.

Convalescence continued uninterrupted until August 10th, when he was discharged cured.

The brandy table is given below. During the period of high temperature and delirium brandy seemed to improve his condition, both mentally and physically.

July 12th.—℥iv brandy in twenty-four hours.
„ 13th.—℥xj „ „
„ 14th.—℥xj „ „
„ 15th.—℥viij „ „
„ 16th.—℥viij „ „

Case 13. *Gangrene of both lungs* (vol. cix, p. 42).—Frederick C—, æt. 35, admitted to Cheere Ward under Dr. Duffin, December 1st, 1893. Complains of sore throat, pains all over, and general weakness.

Occupation.—Bookbinder.

Family history.—Mother died of heart disease. Father died of malignant disease of the tongue. No history of phthisis.

Personal history.—Always been healthy. Only very moderate drinker. Never had any serious illness. Married; no venereal disease.

History of present attack.—He first felt ill November 20th, when he got shivering fits and pains all over, especially in the head. He was sick after every meal, but has had no sickness for the last week. About the same time he began to suffer with sore throat and hoarseness. He has had no diarrhœa or epistaxis. On the 28th the calf of right leg became swollen and tender, but the tenderness has disappeared now. He has suffered with a good deal of cough and dyspnœa since he has been ill.

Present condition.—Thin, pale man, cheeks flushed, expression anxious. He is perspiring profusely. There is a patch of herpes labialis on the lower lip. Tongue covered with thick fur, brown in the centre and very sore. Appetite bad, bowels irregular. Pulse 115, full and bounding. Heart apex-beat in fifth space. Dulness not limited to the heart. There is a soft systolic over cardiac area, not conducted into axilla. Resp. 48. Chest expansion better on the right side than the left. Dulness on left side up to third rib. Tubular breathing and crepitations at the upper part. Loss of all sounds below. Behind: dulness up to spine of scapula, bulging of the side. Tubular breathing, crepitation and bronchophony to angle of scapula, and absolute loss of all sounds below. Sputum viscid and prune-juice in character. Liver and spleen normal apparently. Tonsils are red and inflamed, and there are ulcers on the right tonsil, uvula, and palate. Large red œdematous swelling about halfway down the right leg on the outside. No definite fluctuation. Temp. 101°.

December 6th.—Swelling of right leg gave fluctuation and was opened, and some dark-coloured pus mixed with blood and clots evacuated. Temperature oscillates with morning fall and evening rise between 99° and 103°.

8th.—Left pleura aspirated, ℥xxxvj removed. Fluid was flaky, and contained about one sixth of its volume of curdy pus. Patient coughing a great deal, and perspiring most profusely at night. Sputum is now offensive and gangrenous in odour. Later an incision was made in the seventh space and pus found, and a drainage-tube put in. No albuminuria.

9th.—Large deep intermuscular abscess opened three inches below right elbow-joint.

12th.—Cough easier, but he perspired more. Seems generally to feel more comfortable but is decidedly weaker. Pulse very fast. Urine contains a small amount of albumen.

18th.—Loss of resonance and consonating crepitations at right apex behind. No breathing at left base; breath very foul. Does not spit up much. Passes everything under him, and is delirious; temp. 102·8°.

20th.—No alteration of symptoms, but got progressively weaker, and died at 8 p.m.

Post-mortem.—Large gangrenous cavity at left base opening into pleura. Small one at right apex. All other organs fairly healthy.

Case 14. *Gastric ulcer with great hæmatemesis.*—Myra W—, æt. 23, admitted to Twining Ward under Dr. Yeo, October 2nd, 1894. Complains of vomiting blood.

Occupation.—Sewing-machine work in bookbinding trade.

Family history.—Father died of phthisis and mother of heart disease. Gout on mother's side.

Personal history.—Had acute rheumatism about two years ago, and was laid up with it for about a fortnight. She has been attending a hospital ever since she was fifteen years of age until nine months ago for indigestion. Menstruation began at fourteen years, and ceased for about four or five months when she was fifteen years old, and since then has been quite regular. She was married three months ago. Bowels always regular, but appetite poor.

History of present attack.—On Wednesday (September 26th), at about 9 p.m., she felt sick, and after lying down for an hour she began vomiting, and brought up about a pint of thin dark blood. At 12.30 a.m. she was again sick, and brought up a still larger quantity of blood than on the first occasion. On Thursday (27th) she felt better, but stayed in bed all day, and at night she vomited up more blood. She then saw a doctor, who ordered lime water and milk. She was sick again on Friday night, and brought up a little blood, also on Saturday night bringing up a few clots.

She was sent up to the hospital, and had an ice-bag applied, since when she has not been sick.

Present condition.—Rather thin woman, face drawn and pale. Mucous membranes extremely anæmic. Appetite gone, very thirsty; bowels regular. No pain on cautious handling of the abdomen except when the hand passes over the epigastrium. Tongue pale with slight white fur. Heart: systolic murmur can be heard all over the cardiac area. No increase of cardiac dulness. Pulse 128, regular in force and frequency, but very small. Lungs: sounds normal. Temperature on admission 100°. Was given carbonate of bismuth and carbonate of magnesium and fed with nutrient enemata, ice only being given by the mouth.

October 3rd.—Nutrient enemata at 8, 11, and 12 last night, nearly all returned in spite of a morphia suppository, gr. ¼, at 6.45 p.m. Was given Inj. Morph. Hypod., ♏ij, at 12.30 a.m. Temp. 98·4°.

6th.—No further symptoms. Was given ℥ij of milk diluted with water every two hours to-day for the first time. Enemata continued.

7th.—Enemata doubled in quantity, and given twice in twenty-four hours. Equal to about Oj of rectal and Oj of mouth feeding per diem.

9th.—Enemata discontinued, ℥iv of milk and lime water every three hours.

11th.—Twice a day a lightly boiled egg and a little bread and butter.

14th.—Had fish to-day, and more bread and butter. Seems convalescent.

Case 15. *Obstruction of cardiac orifice of stomach.*—Ellen P—, æt. 29 years, admitted into Twining Ward under Dr. Yeo on May 28th, 1894. Patient complains of pain in chest, and frequent sickness.

Occupation.—Housework.

Family history.—One brother died of phthisis. No other history of disease.

Personal history.—Patient has never had any serious illnesses, but has always been rather anæmic. Appetite generally been good, but the bowels have mostly acted irregularly. Menstruation always regular and somewhat profuse, began at thirteen. Was married twelve months ago, and menstruation has been regular since, but less profuse and accompanied with more pain. Ovaritis five years ago. No alcoholic history.

History of present attack.—At the beginning of last March (three months ago) she first noticed pain in her chest after taking food, but she had no sickness then. In the middle of April she was ordered potassium bromide for sleeplessness, and she vomited every dose. Soon afterwards solid food caused a pain immediately after swallowing, and was at once rejected. She now vomits fluids also, but has never brought up any blood. The vomiting is worst at morning and evening. Pain only attacked her after food at first, but is now present continuously. It is stabbing in character, and seems to go through her chest, and is felt behind between the scapulæ. She has been under treatment all the time she has been ill, and in the beginning of May went to Torquay for ten days, but derived no benefit. For the last three periods she has used morphia suppositories to relieve the pain, and for the last three days to make her sleep.

Present condition.—She is a pale, badly nourished woman. The mucous membranes are anæmic. Tongue clean. Patient feels hungry and thirsty. Bowels constipated. Pulse quick, small, somewhat irregular, and weak. Heart-sounds normal. Chest expansion bad. Lung-sounds normal. Liver and spleen: dulness normal. Abdomen rather tender all over; no marked tenderness in hypogastric region. Urine 1036, acid, no albumen or sugar; sediment of urates.

May 29th.—Sick three times during night directly after medicine; vomit neutral or faintly alkaline. Given Liq. Calcis, ℥j, every three hours.

30th.—Took medicine at 9 p.m., sick directly afterwards and at 11.15 p.m.; vomit always alkaline. Not sick after egg and medicine at 6 a.m., but always so after ice. Sick again at 9 a.m. after medicine.

June 1st.—Has been sick ten times since last note, so medicine was changed to following: ℞ Cocainæ Hydrochlor., gr. j; Liq. Morph., ♏lxxx; Aq. Laurocerasi, ad ℥j: M. ft. mist., ʒj quaque 4ta hora sum. The stomach-tube was passed, but could only be got down sixteen inches from the teeth.

2nd.—Still sick after ice, but not after medicine. A dull area noticed at cardiac end of stomach.

3rd.—Still sick; no pain.

4th.—Pain back again, burning in character.

5th.—Complains of difficulty in breathing. Cough has developed, and is troublesome, paroxysmal and exhausting. Yellowish expectoration brought up with cough. Groans in her sleep. The mass of dulness is less; stomach note extends higher up. Frictions and crepitations at bases of both lungs. The œsophageal bougie was passed 16 inches, and then came upon a distinct wall of resistance.

6th.—Still coughing; expectoration contains tubercle bacilli. Resp. 40, very shallow. Crepitations very fine, and peculiar in character on right side.

7th.—Got progressively weaker, and died last night.

Post-mortem.—The bronchial glands were much enlarged and hard. Lungs infiltrated diffusely with small grey nodules like those of phthisis. Pleura studded with similar nodules and thickened. Peritoneum thickly studded with these nodules, and a confluent mass of them had surrounded the cardiac orifice and caused the stricture. Mesenteric glands also enlarged and hard.

Microscopically.—The nodules were found to be distinct neoplasms of an alveolar type, but the cells within the alveoli seemed rather small for carcinoma.

Case 16. *Intestinal ulceration, probably duodenal.*—Eugenie C—, æt. 26, admitted into Twining Ward under Dr. Yeo, December 20th, 1893.

Patient complains of pain in the right side of the abdomen after food. Occupation housework.

Family history.—Phthisis on her mother's side.

Personal history.—No illnesses until the present one. Married; two children, who are alive and healthy; no miscarriages. Menstruation regular until five months ago, since when she has had complete amenorrhœa. Has always had a somewhat delicate digestion, and has had to live carefully, and has always had a tendency to constipation.

History of present attack.—About two years ago she began to suffer with darting pains through both sides of the abdomen after food, and distension of the stomach. She was seldom sick, but was always constipated, and obliged, therefore, frequently to take opening medicine, which increased the pain. She got gradually worse till June, 1893, when she had gradually lowered her diet to milk only, and suffered pain even on taking that. In this month (June) she had an attack of jaundice, which yielded to treatment and did not last long. Her doctor then told her she was suffering with gall-stones. Her pain continued off and on after this, so that she was occasionally obliged to stay in bed until six weeks ago, when she had another attack of jaundice, which is now fading away. She has had very little vomiting, and has never brought up any blood. Her motions, however, have always been very constipated and quite black. She has never seen any gall-stones.

Present condition.—Pale, thin, anxious-looking woman; skin decidedly icteric in colour, as also conjunctivæ. Mucous membranes somewhat anæmic. Tongue large, marked by teeth and somewhat furred. Appetite lost; all food gives her great pain. Bowels very confined. Pulse 72, small, regular, and rather high tension. Heart and lung sounds normal. Liver dulness commences at fifth rib, and the edge is felt about one inch below the costal margin. Spleen just felt on taking a deep breath. Stomach resonance extends somewhat high in the axillary line. Abdomen rigid, rather retracted, tender over epigastrium where she refers her pain. No ascites or enlargement of superficial veins. Legs not œdematous. Urine 1020, acid, no albumen, but contains some bile. Temp. 98·4°.

December 23rd.—Sick three times after milk and lime water, and after beef tea. Two attacks of pain, relieved by fomentations and morphia. Simple enema produced motions which contained material like coffee grounds. Jaundice is a little deeper in tint.

24th.—Three motions of almost pure dark-coloured blood. The temperature varies between 98° and 100°.

27th.—Some bright blood in motions. She has a few hæmorrhoids, otherwise the rectum is normal.

30th.—Jaundice is much less. Still frequent attacks of pain.

January 1st.—Motions not black for the first time. Spleen not felt.

5th.—Weight 6 st. 2 lbs. Elongated moveable swelling in the left iliac region, probably fæces.

12th.—Left iliac region quite clear. Much less pain.

17th.—Pain is worse again. The transverse colon and sigmoid can be distinctly felt, loaded with fæces. She was given a simple enema.

19th.—Weight 5 st. 9 lbs. The motions contain claret-coloured blood.

21st.—Feels easier. There seems to be a slight thickening close to the epigastrium.

28th.—Is on a light bread and pudding diet, and has less pain than with the fluid one.

February 13th.—More blood passed, separate from motion and in clots.

16th.—More bright blood. Weight 5 st. 12 lbs.

19th.—Still slight pain after food in the right side.

23rd.—Better. Weight 5 st. 13 lbs. Temperature steady at normal.

March 2nd.—No pain; feels much stronger. Weight 6 st. 1 lb.

9th.—Says she feels quite well. Weight 6 st. 1 lb.

11th.—Wished to go home, and was allowed to, as she had had no return of symptoms for ten days.

Case 17. *Tubercular kidney* (vol. cx, p. 232).—Annie M—, æt. 20, admitted into Twining Ward under Dr. Dalton, July 11th, 1894.

Occupation.—Dressmaker.

Complains of abdominal pain, which is continuous when standing, and of swelling of right loin.

Family history.—Both parents alive and healthy. One sister died of tumour of the brain.

Personal history.—She has been very delicate all her life, suffering from diarrhœa and poor appetite. Patient had an attack of pleurisy when a child. Menstruation commenced at seventeen years, and ceased suddenly and permanently at eighteen. For the last year or so she has suffered greatly with incontinence of urine during sleep, and an inability to hold it long during the daytime. This is, in reality, an aggravation of a trouble to which she has always been rather subject.

History of present illness.—In December, 1892, she went to the Samaritan Hospital on account of the incontinence, and was told there that her kidneys were diseased, and that she had a tumour in the right lumbar region. While in the hospital she first noticed that she passed some blood in the urine at the end of micturition. Since then she has had blood in the water always, except when lying in bed. In July, 1893, she had scarlatina, and passed much more blood during the fever. Subsequently she lived on milk for a short time, and then took an ordinary diet with some beer. Six weeks ago she became so weak that she had to keep to her bed. Has not passed so much blood since then. She lost her voice gradually three weeks ago, and has a slight cough and sweats at night, particularly about head. Diarrhœa has troubled five or six times a day for the last five weeks.

Present condition.—A pale, emaciated, and anæmic girl. Tongue moist and furred. Appetite bad. Bowels loose. Pulse 85, small and weak. Heart sounds normal.

Chest.—Occasional râles of mucous type at right apex. Crepitations on coughing, with dulness, pectoriloquy, and bronchial breathing at left apex behind. Resp. 22.

Abdomen.—In the right hypochondrium, umbilical and lumbar regions there is a tumour to be seen. On palpation it feels somewhat fluctuating. Anteriorly the tumour reaches to the linea alba, and it has a convex superior border reaching from the umbilicus to the ribs. Below this a notch is felt. The lower border, also convex, extends almost to the anterior superior iliac spine. It is dull on percussion. Posteriorly it is not so easily felt, but a resistance can be made out, and the loin is quite dull on percussion. Resonance may be obtained between the dulness of the liver and the dulness of the tumour. Liver and spleen not felt. No ascites. Apparently some intestinal tenderness.

Urine acid, sp. gr. not taken, as only a small quantity was obtainable. Contains albumen, pus, and blood.

July 14th.—No change noticed with the exception that there is perhaps more resonance below the tumour.

16th.—The convexity is much more marked. In the nipple line the tumour measures five inches. The furrow in the centre is still well marked.

She was sick all yesterday after every kind of food, and was given an enema in the evening containing 10 grs. of Dover's powder. Diarrhœa is a little better since, but she has passed very little urine.

She was removed to Wigram Ward, and the tumour, found to be a tubercular kidney, was cut down on by Mr. Burghard and a quantity of pus evacuated. The kidney was quite free and might have been removed, but the patient's weak state forbade it. As it was, however, she only recovered from the operation, and sank and died two days later.

Post-mortem appearances of kidney described in Pathological Report (p. 319).

Case 18. *Influenza simulating cerebro-spinal meningitis* (vol. vi, p. 98).—Henry N—, æt. 48, admitted into Cheere Ward under Dr. Curnow, May 12th, 1894. Complains of pains in head and down spine.

Occupation.—Pen polisher.

Family history.—Father died of heart disease.

Personal history.—Had scarlatina forty years ago, and made a perfect recovery. Influenza two years ago with bronchitis, which laid him up about a fortnight. Smallpox as a child. No venereal; no excess of alcohol.

History of present attack.—Three weeks ago he had a shivering fit one evening, which lasted five or ten minutes. He then was seized with a very sudden pain in the head as if a string were being pulled tight round it. This got worse, and was followed by a severe headache, which has been practically continuous till now. During the first two or three days the headache was very intense, and felt as though some one were sticking a knife through his head from one side to the other. About two days later the pain remitted in his head and ran down the back. Has been in bed ever since the starting of the headache. Was attacked with vomiting on and off for the first week, but not since. Eyesight was rather dim, but there was no diplopia. Has had some slight diarrhœa.

Present condition.—Anæmic man. Tongue protruded straight and covered with dirty white fur. Appetite poor; bowels constipated. Pulse 60, regular, and moderate tension. Heart and lung sounds normal. Liver and spleen apparently normal. Urine 1020, acid, no albumen. Back is very tender at upper cervical vertebræ. Sits up with difficulty. Temp. 103·2°. Eyes: optic discs normal. Was given some ammonia and ammonium acetate.

May 16th.—Lies with head much retracted, says it eases the pain. Has had no delirium or vomiting since admission.

21st.—Temperature down. Headache better, but he is still very weak. Given Mist. Quiniæ c̄ Ferro, ℥j, t. d. s.

30th.—Quite convalescent. No headache. Gaining strength rapidly.

June 9th.—Discharged cured.

Case 19. *Peripheral neuritis from lead poisoning* (vol. x, p. 224).—George B—, æt. 37, admitted to Cheere Ward under Dr. Ferrier, February 17th, 1894. Complains of having lost the use of his hands.

Occupation.—Works at the manufacture of tin plate, and says that there is no lead in his own part of the work, but that he works in a room in which a great deal of soldering is done. Has been twenty-two years at this work.

Family history.—Good.

Personal history.—Whooping-cough and measles when young. Smallpox eleven years ago. No specific disease, gout, or rheumatism. Drinks a large amount of alcohol, chiefly gin. Had an attack of abdominal pain and constipation seven years ago, since when he has had four similar attacks. He has suffered frequently with morning sickness and inability to eat any breakfast, but has never had any hæmorrhoids, hæmatemesis, or jaundice.

History of present attack.—Last October patient noticed that his hands used to shake both on holding them out in front of him and on using them for his work. This was quickly followed by severe pain in the abdomen, lasting three or four weeks. In the meantime he got generally thinner and weaker in the arms, although he suffered no pain in them. He has been under treatment, and the tremors and pain have been temporarily relieved, but have now recurred.

Present condition.—Somewhat thin and anæmic man, heavily pitted with smallpox; breath rather offensive. Tongue fairly clean and protruded straight; edges marked by teeth. Teeth are very bad, and there is a marked blue line at the edge of the gums in both upper and lower jaws. Appetite good; no sickness now; bowels somewhat constipated. Pulse 80, regular, tension moderate, artery is just felt. Heart and lung sounds normal. Liver and spleen apparently normal. Urine 1018, acid, no albumen or sugar. Gait presents no unusual features, but he tires on very slight exertion. *Arms and hands.—Left arm* shows marked wrist-drop; muscles of both upper and forearms are flabby and wasted. He cannot extend his wrist or his fingers; can supinate slightly and pronate rather better, but still only weakly. Grasp is very weak as flexion at wrist occurs. Can flex and extend elbow-joint, but there is very little power in these movements. Deltoid shows no wasting. There is no muscular tenderness. The reaction to faradic current is lost by all muscles on the back of forearm except the supinator longus and extensor ossis metacarpi pollicis. The reaction is also lost in the thenar group of muscles. With the galvanic current A. C. C. is equal to K. C. C. in the above group of extensors in the forearm, and A. C. C. is greater than K. C. C. in the thenar muscles. *Right arm* shows slightly more wasting than the left, especially in the upper arm and deltoid. Reaction to faradic current is the same as in left arm as regards the number of muscles reacting, with the exception that the ossis metacarpi does not react, and it requires a stronger current to make the others act. The interossei and hypothenar muscles also require strong current. To galvanism the reaction is A. C. C. greater than K. C. C. in the extensors and thenar muscles, and all these muscles react very sluggishly. Legs: all muscles react normally, and he can perform every movement. *Reflexes.*—Knee-jerks are very active and equal, no ankle-clonus. *Sensation.*—No loss of tactile, painful, or thermic sensation. Special senses.—Eyes: movements of eyeballs perfect up and down, but there is slight nystagmus on looking to extreme right or left. Ears: can hear watch a foot away on left side, but only six inches away from right. Taste and smell are normal. Was ordered galvanism, and to be given hypodermic injections of strychnine, starting at $\frac{1}{50}$ gr. twice a day, to work up until physiological effect was noticed.

February 26th.—Muscles examined by Dr. Ferrier, and found as above, except that neither extensor ossis metacarpi reacted to faradisation.

March 5th.—Dropped wrist much less on both sides, especially on right.

12th.—Can get right wrist and hand nearly horizontal with back of forearm. Left now not quite so good. K. C. C. is now greater than A. C. C. in extensors at back of both forearms.

19th.—Right wrist-drop is now unnoticeable, except when he holds his arms straight out. Left still well marked.

27th.—Right drop rather more noticeable, left much less so. Still no reaction to faradic current.

April 10th.—Both wrists much better. Was ordered massage. Left-hand extensor ossis reacts to strong currents.

26th.—By Dr. Ferrier. First and second interossei act feebly to faradic current on left side, but more strongly on right side. All muscles of both arms and hands give a greater K. C. C. than A. C. C.

Patient progressed steadily as regards power until discharged on July 24th, when he could lift both hands and grasp fairly strongly, but could not throw back wrists smartly. No reaction to faradisation in extensors. When seen on October 10th he was still improving.

Case 20. *Jacksonian epilepsy* (vol. x, p. 24).—William H—, æt. 51, admitted into Cheere Ward under Dr. Ferrier July 13th, 1893. Complains of epileptic fits.

Occupation.—Shopkeeper.

Family history.—Good. Father still living and healthy.

Personal history.—Patient has always been strong. Has never had any severe illness. No venereal, always temperate.

History of present attack.—Last August (1892), whilst walking across his shop, he stumbled and fell, striking the side of his head on the ground. The fall produced a lump on the side of his head, which was certainly not there before, and the patient's friends say the lump constantly varies in size. He had at the time a superficial abrasion, which took a fortnight to heal. He was not rendered unconscious,—in fact, he appeared none the worse for the fall until a fortnight after the accident, when he was getting out of bed one morning and (was told) made a choking noise, and fell forward in an unconscious state. He lay quite still for about a quarter of an hour, breathing very hard, and very white in the face. Two days after this he had another fit, which started with twitching in the muscles of the right hand and right side of his face, and ended in loss of consciousness. He was well for three weeks, and then had some more attacks similar to the last. He seems to have had some confusion of ideas and aphasia after each attack. He has had three fits in the last fourteen days, and says he has lost flesh and aged rapidly. He has been sick since last week.

Present condition.—Anxious-looking man, rather thin. Lies on his back all day, and does not speak unless spoken to, and then only answers in monosyllables. Seems fairly intelligent. Usually on exertion he gets twitching of facial muscles of right side. Over the left parietal region there is a circumscribed hard swelling, about three inches in circumference. The centre is soft, and can be reduced in size by steady pressure. Pressure here causes pain, and does not do so over any other part of cranium. Heart and lung sounds normal. Urine 1020, acid, no albumen or sugar. Arms: all movements perfectly performed. Legs: movements normal. Right knee-jerk active; left knee-jerk less so. Plantar reflexes equal and active. Sensibility to touch and pain normal. Tongue protruded to right. During spasm, right angle of mouth is drawn up. Muscles react normally to the batteries. Pupils contract to light and accommodation. Discs: right indistinct, especially on inner aspect; left distinctly swollen. Complains of difficulty of swallowing.

July 15th.—Antipyrin gr. x occasionally.

17th.—Sick. No pain. Dysphagia continues, but is slight. Taste and smell normal.

19th.—No fits since admission, though the twitching is often present.

20th.—Slight weakness of right hand.

21st.—Suddenly became unconscious this morning, and remained so for fifteen minutes. Breathing stertorous; conjugate deviation of eyes to the left. Usual twitchings observed on regaining consciousness.

24th.—Can only write with left hand; shows great difficulty. Mr. Rose was consulted, and thought the tumour malignant. It was decided to trephine.

25th.—There was found to be a small fissured fracture over the surface of the bone running across the tumour, which was partly cartilaginous on the surface of the skull. A square piece of bone including the fracture was removed. Beneath this and the dura mater the cortex of the brain was found to be hard, and a piece was removed. There was free hæmorrhage, and the indurated part was found to be too large for removal. Especially was further interference regarded as injudicious, as pieces stained and mounted during the operation showed the tumour to be sarcomatous. After regaining consciousness the twitching was less, and the patient had six hours' natural sleep.

27th.—Twitching of right hand, but not of face. Discs less swollen.

29th.—Much better; uses polysyllables in speaking. Is very hopeful about his recovery, and very bright.

August 5th.—Fits at 8 a.m. and 9.40 p.m., lasting ten minutes, and similar to previous ones.

13th.—Right hand weak, and right knee-jerk very active.

September 6th.—Discharged with protective plate over the hole in his skull; seems better, but right hand is still weak.

October 2nd.—Came up for observation. No more fits; all movements of right hand present, but slightly weak. Discs: swelling gone down.

Case 21. *Disseminated sclerosis* (vol. x, p. 166).—William R—, æt. 30, admitted into Cheere Ward under Dr. Ferrier November 24th, 1893. Patient complains of loss of control over bladder and rectum, numbness of both legs and right hand, and loss of power in legs.

Occupation.—Compositor ; has done very heavy work.

Family history.—Very good.

Personal history.—Always healthy. Was operated on seven years ago by Mr. Wood for hernia. No syphilis ; moderate drinker.

History of present attack.—Five and a half years ago he noticed that when walking his left leg would suddenly jerk forward, and that he could not control it. About the same time he became unable to hold his water for any length of time. His right leg became affected similarly eighteen months later, and then both legs got very stiff and numb, though he was still able to move and bend them. For the next year he did not take any advice, believing that he would regain his health in time, but he became gradually worse, and two years ago he lost control over his rectum. He went to various hospitals, but was refused admission on account of the duration of the case. By this time he could only walk with the assistance of a stick, and then with difficulty. Since last year he has been unable to get upstairs. He has been attending as out-patient at this hospital, and it is only within the last month that his right hand has become affected. He has left off work since last May, and throughout his illness has never suffered any pain.

Present condition.—Healthy-looking, well-nourished man. Tongue slightly furred, protruded straight. Appetite good. Bowels very constipated, and have been so for last two years. Pulse 80, regular ; good force and tension. Heart sounds normal. Lung sounds normal. Liver and spleen apparently normal. Urine 1034, acid, no albumen or sugar. *Walk.*—With the aid of sticks he manages to shuffle slowly along, scraping his toes on the ground, especially the left, and heaving up the shoulder over the foot as he advances it. He cannot stand without oscillating when his eyes are shut. All movements of arms and legs are present, but dorsal extension of the feet is performed very feebly. Both hand-grasps are fairly strong. His fingers tremble with a coarse tremor on being held straight out, especially after a short time. He can write, but in a very short time he complains of cramp in his fingers, and his writing becomes very shaky. Sensation to tactile, thermic, and painful sensation is accurate. *Reflexes.*—Knee-jerks are very active and equal; patellar clonus may be obtained. Plantar reflexes active and equal. Slight ankle-clonus is present. All muscles give the normal reactions to electric stimuli. *Eyes.*—Pupils equal and react to light and accommodation. Slight nystagmus on looking to extreme left. Discs normal.

December 4th.—The right hand is excessively unsteady. The tremor and stiffness of legs have subsided with the rest in bed.

7th.—Occasional spasmodic, involuntary movements of legs. Was given Ergotin, gr. j; Ext. Belladonnæ, gr. $\frac{1}{4}$; Ext. Gentianæ, q. s., ft. pil., t. d. s.

13th.—Feels better, can walk without sticks. Numbness and spasmodic movements disappeared.

January 8th, 1894.—Medicine changed, Liq. Strychniæ ♏v.

15th.—Does not seem so well since the change of medicine. Has been put back on original pills.

March 3rd.—There is a peculiar patch of loss of thermic and painful sensation on the anterior surface of the right leg just above the ankle. He can localise touch on this spot distinctly.

12th.—Feels weaker, and complains of numbness round his knees.

19th.—Nystagmus much more marked; is now greater on looking to right than left. Writing not so good. Fingers when held out are not so steady. Grasp weaker with right hand than left.

April 24th.—Discharged in the same condition. Walk decidedly unsteady. Knee-jerks very active; tendency to ankle-clonus. Slight persistence of patch of thermic anæsthesia and analgesia on right leg; marked trembling of right hand, not so much of left. Nystagmus more marked on looking to right than left.

October 18th.—Came to report, and is if anything worse.

Has been to several seaside homes without benefit, as his general health is perfect.

Case 22. *Friedreich's disease* (vol. xi, p. 188).—Elizabeth D—, æt. 19 years, admitted into Todd Ward under Dr. Ferrier February 21st, 1894. Complains of inability to walk. Has been ill since five years old, and has never been able to do any work.

Family history.—Father and mother alive and healthy. All other relations except brothers and sisters are healthy as far as she knows. She has five sisters, the eldest of whom suffered with chorea for a fortnight, but is now in good health. The second is in good health; the third is in the West London Hospital with a disease similar to this; the others are well. Two brothers died in infancy of bronchitis, one of phthisis, and one was stillborn.

Personal history.—When five years of age she was at school, and up to this time was quite well and could walk perfectly. One day she was attacked with vomiting and faintness, and was brought home from school. The same night she had convulsions, which occurred next morning and for the two following mornings. Since then the symptoms from which she now suffers have been developing gradually, and she has been in several hospitals at various times. She has had shooting pains in the legs for a long time, but has never had any pain in the abdomen, vomiting, or convulsions since the original attack.

Present condition. — Well-nourished girl, not anæmic. Tongue large, flabby, white fur on dorsum. Appetite good, no difficulty in swallowing or eating. Bowels constipated. Heart and lung sounds normal. Abdomen normal. Muscles of face normal, tongue protrudes slightly to the right. Eyes: pupils react to light and accommodation. Movements of eyeballs fair, but there is a tendency to nystagmus, especially on looking to extreme left, and she cannot fix her eyes on any point for long. Discs normal. Arms: Handgrasp good; all muscular movements can be performed, but there are slight tremors on voluntary movement of either hand and distinct inco-ordination in attempting to touch any given object. Leg: knee-jerks absent. Plantar reflexes:

right gone, left reacts occasionally. Power and movements are good. No loss of muscular sense on placing legs in various positions. The muscles are not wasted. Tactile and painful sensibility are unimpaired. Walk: she cannot walk without help, and the gait is one of exaggerated ataxy. She lifts her legs very high, and keeps them very wide apart. Brings the heel down violently, and keeps moving her head and hands at the same time. Speech: thick, slow, and hesitating (she has been operated on for cleft palate). Hearing deficient in both ears, especially in left. Taste and smell unaffected. Urine 1030, deposit of phosphates. No albumen or sugar.

March 5th.—No nystagmus. Cannot stand alone, gait very ataxic.

12th.—Talipes varus in both feet. Hyperextension of basal phalanges of toes.

No improvement likely to be permanent took place, and she left the hospital in much the same state.

CASE 23. *Cerebral tumour; some improvement after operation* (vol. xi, p. 122).—John G—, æt. 56, admitted into Cheere Ward under Dr. Ferrier, December 18th, 1893. Complains of pain in head and inability to express his ideas.

Occupation.—Printer (compositor).

Family history.—Good.

Personal history.—Always been healthy, no venereal or other disease. Very moderate drinker.

History of present attack.—Was out all day on July 3rd, 1893, in intense heat, and on July 4th was attacked with convulsions while at his work. He was taken to St. Bartholomew's, where he had eleven more, making fifteen altogether. He was unconscious until 7 a.m. on the next day, and when he recovered consciousness he had lost power in his left arm and leg. He stayed in hospital for three weeks, and then was discharged quite well. He went back to work for a day or two, but was sent away again for being too slow. For the last month he has noticed a difficulty in saying things, and is apt to forget in the middle of a sentence. Has had no more fits, he complains occasionally of pain in the left side of his head. Never has any vomiting.

Appetite is usually good, but he has at times tried to eat with the wrong end of his fork.

Present condition.—Rather feeble-looking man, distinctly old-looking for his age. Shows marked weakness of right muscles of face while talking. Tongue protruded to right side, rather foul. Appetite good. Bowels regular. Liver and spleen apparently normal. Heart and lung sounds normal. Pulse 60, regular; arteries rather thick. Power of grasp feeble on both sides. No loss of movement or sensation. Dorsal flexion of feet present and good, also flexion of knees. Eyes: movements normal, pupils react to light and accommodation. Discs slightly swollen, margins blurred. Hearing good. Taste cannot distinguish between sugar, salt, and quinine. Has difficulty in expressing things in continued sentences. Recognises most objects, though often makes mistakes; cannot name them readily. Slight tenderness over left angular gyrus. Urine 1020, acid, no albumen or sugar.

December 20th.—Passed water and fæces under him.

21st.—Hemiopia on right side, completely up to middle line. Can recognise things, but cannot name them; can say his name, but cannot write it.

30th.—Power of right arm very deficient. Mental state worse, less intelligent.

January 8th.—Calls a watch "25," also a knife "25." Both optic discs much swollen and blurred.

15th.—All the region below left parietal eminence is very tender. Changes in left disc are much more marked than in right.

18th.—Passes the day in sound and heavy sleep, unable to understand the simplest command. There seems to be some loss of sensation on right side of face, as also on right hand and foot.

19th.—Removed to operating theatre and trephined by Mr. Rose over the left parietal eminence. A large tumour (which proved to be sarcoma on microscopic examination) was found growing deeply into the brain. It could not be removed, but it was thought that the relief of tension might improve his condition.

28th.—Wound bled a good deal in night. This morning he was much brighter, and said he felt better and had no pain. He repeated things said to him parrot fashion, but did not seem to be much more intelligent.

22nd.—Offered to shake hands. Said he felt pretty middling, and remarked voluntarily that it was a fine day.

31st.—More particular in his control over his bladder.

February 1st.—Recognised a shilling. When asked to put out his hand he put out his tongue.

15th.—Got up. Said he thought he would walk about a little. He can say sentences in conversation spontaneously, but if he begins to think he gets confused.

22nd.—Tumour is growing subcutaneously.

March 4th.—Marked weakness of right arm. Seems to be getting less intelligent.

12th.—Tumour still growing, longest measurement is now 17 inches. Cannot name anything accurately.

May 10th.—Right leg evidently weak now. He walks badly, scraping his right foot on floor. Very anxious to go home.

17th.— Cannot stand. Sleeps most of his time. Complains when roused of pain in head where tumour is. Tumour still enlarging rapidly.

18th.—Much more stupid, cannot say anything intelligible except his name.

21st.—Condition same; was taken home by his friends because he fretted so to go home.

Case 24 .*Cerebral tumour* (vol xi, p. 248).—Robert R—, æt. 41, a labourer, admitted into Cheere Ward under Dr. Ferrier, August 9th, 1894, complaining of weakness and pain in the head, and being unable to see objects to the left side.

Family history.—Father died of heart disease, mother died of apoplexy at seventy-seven. No history of phthisis or any nervous disease or tumours.

Personal history.—No scarlatina, but has had acute rheumatism three times. Married, has fourteen children, and wife has had no miscarriages. Never had any venereal disease, and has only drunk a very moderate amount of alcohol. Always has been strong, but had an attack of influenza in February, 1892, which laid him up for a month.

Three years ago he had a fit, and two days later had another, and one more in six weeks' time. In answer to a leading question he said that they were left-sided.

History of present attack.—Six months ago he began to feel weak and to suffer with pain in the head, which was increased on turning it. The pain used to come on suddenly when asleep, and continue for a variable number of hours. It was accompanied with diplopia and vomiting. He was never a whole day without headache. He gave up his work nine weeks ago, and his symptoms have continued up to the present. Appetite has been good throughout, but his bowels not very active. The hemianopia came on three years ago.

Present condition.—Healthy-looking, well-nourished man. Tongue furred and moist, but protruded straight. Appetite good. Vomiting occurs without reference to meals, bowels constipated. Heart and lung sounds normal. Liver and spleen apparently normal. Eyes: pupils react to light and accommodation. Discs are both much swollen and blurred. There is left hemianopia completely up to the middle line. All movement of eyeballs perfect. Hearing, taste, and smell are normal. Arms: no wasting of muscles to be seen; all movements are present, but there is general weakness on both sides. Legs: no wasting, all movements present. Right knee-jerk active, left slight or absent. No reeling on walking, but has giddy attacks which occasionally cause him to fall. All sensations to tactile, thermic, and painful stimuli normal.

August 10th.—Has been vomiting.

14th.—More sickness. Headache very bad.

17th.—Got up and walked steadily; says he feels very giddy, and has great pain in the head.

September 14th.—Wanders a little at times.

16th.—Head markedly retracted.

27th.—Tender spot in the occipital region about the size of a florin. Situation, 9½ inches from glabella and 2 inches from parietal eminence, 5½ inches vertically upwards from mastoid process. He wanders a great deal, and gets out of bed at night.

October 4th.—Perimetry observed. Hemianopia goes through the fixation point.

5th.—Was operated on by Mr. Rose, who removed a large encapsuled tumour from the occipital region. All disease seemed to be taken satisfactorily away, but after recovering from the anæsthetic comfortably he died suddenly next day.

Post-mortem.—The tumour, which was encapsuled and lobulated, weighed nearly three quarters of an ounce, and was discovered to be a fibro-sarcoma. The tumour involved the right hemisphere, from the whole of which, however, the pia was easily stripped with the exception of the occipital lobe on its mesial and external surfaces. On the mesial surface the tumour had destroyed the parieto-occipital fissure, and the adjacent parts of the præcuneus and cuneus. The under lip of the calcarine fissure and the adjacent part of the lobus lingualis were perfectly free.

The dorsal lip of the calcarine fissure appeared to contain nodules of the tumour when examined from the surface. On the convexity of the hemisphere the tumour had destroyed the posterior end of the postero-parietal lobule, the external parieto-occipital fissure, and the adjacent part of the first occipital gyrus.

Case 25. *Cerebellar tumour with paroxysmal pain in head.* —Margaret C—, æt. 22, admitted into Twining Ward under Dr. Yeo, June 27th, 1894. Patient complained of giddiness, shooting pains in the head, mistiness of vision, and pain between the shoulders.

Occupation.—Dressmaker.

Family history.—Father was subject to epileptic fits, and died in one. Mother had cancer of the breast.

Personal history.—Never had any serious illness that she can remember. Appetite always good. No discomfort after food until lately. Bowels always very irregular.

History of present attack.—Just after last Christmas she was attacked with violent pain shooting from the forehead to the back of the head, which caused retraction of the head. She also complained of sickness and giddiness, and saw everything indistinctly and double. This attack lasted two days, and then left her suddenly. Three or four days later she had another similar attack, also lasting two days. A fortnight later she had a third attack, and similar attacks have been frequent since. Lately, however, she has had giddiness and slight headache between the attacks. She has lost flesh and feels very weak. Her tongue is greatly furred during an attack. Two or three times she has lost consciousness for a few minutes, but has never had convulsions nor bitten her tongue.

Present condition.—Fairly well-nourished girl, complexion rather dark. Tongue fairly clean. Breath very foul, gums bleed rather easily. Pulse 75, regular, equal, and good tension. Heart sounds normal. Lung sounds normal. Appetite very good, no pain after food. Bowels constipated. Tenderness at back of neck and over the scalp on percussion. No particular headache at present. No ovarian or diffuse spinal tenderness.

July 3rd.—Bad attack of pain in the head, began this morning at 4 o'clock. Shooting pain runs down from back of head to back. Scalp very tender. She keeps her head drawn back to relieve the pain. Nausea, but no vomiting. Breath offensive, tongue coated. Diplopia for distant objects one above the other.

5th.—Head aches only a little now.

7th.—Another attack. Head drawn back, and pain increased on bending it forward. Attack lasted one and a half hours, during which time temperature fell to 96°.

9th.—Similar attack, but slighter.

14th.—Bad attack at 2.30, lasting an hour and coming on suddenly. Bowels have been acting regularly, now under saline and stomachic treatment.

19th.—Head very bad again, but improved by Sodii Salicyl. Antipyrin, āā gr. x. Double optic neuritis and retinitis.

21st.—Woke up suddenly in the night feeling chilly and with a sensation of falling, which is quite new. Temp. 96°. Vomiting relieved her.

25th.—More pain at 2.30 a.m., lasting whole night.

August 4th.—Has had another attack early this morning. Sick twice. Has been better last week or so. Taking Mist. Alba in the morning.

7th.—Had complained of pain in the head during the evening, which became very severe at 1 a.m. Head and body rigid. Quite conscious, breathing normal. Was given Antipyrin gr. x without relief. About 1.35 a.m. breathing became stertorous, tongue was held between the teeth. Face very pale. Pulse very feeble. Unconscious, eyes open, no convulsive movements. Remained in this condition for five minutes, and then got better and recovered consciousness. Inject. Morph., ♏ij, administered. Sank, and died at 2.25 a.m.

Post-mortem.—The left lobe of the cerebellum was found to be much larger than the right. There was a large tumour in the left lobe about the size of an egg. This tumour was found to contain within its substance a cyst nearly as large as a greengage. Within the cyst was a mucoid transparent liquid, and there were bands running across the cavity. The substance of the tumour was softish and somewhat gelatiniform in nature. The fourth ventricle was dilated.

GENERAL TABLE OF SURGICAL CASES

(Admitted between October 1st, 1893, *and September 30th,* 1894).

PREPARED BY L. V. CARGILL, F.R.C.S.,
SURGICAL REGISTRAR.

DISEASES.	Total.	Cured or relieved.		Unrelieved.		Died.		Still under treatment.	Remarks.
		M.	F.	M.	F.	M.	F.		
GENERAL DISEASES.									
Marasmus	1	...	...	1	...	...	...	...	
Rickets	1	...	1	...	...	...	...	...	
General tuberculosis	1	...	...	...	...	...	1*	...	* And septic endocarditis.
Syphilis	4	1	1	...	1*	1†	...	...	* Sent to Lock Hospital. † Diffuse gummatous infiltration of neck, chest, and axilla. Patient in very weak state on admission. Died of asthenia.
Pyæmia	1	1	...	...	...	...	...	...	
Erysipelas	1	...	...	...	...	...	1*	...	* Had also tuberculosis.
Senile gangrene	3	1	2	...	...	...	...	...	
LOCAL DISEASES.									
Digestive system—									
Cancrum oris	2	2	...	...	...	...	...	...	
Parotid fistula	1	...	1	...	...	...	...	...	
„ tumour	3	1	1	...	1*	...	...	...	* Hypertrophy (?) of parotid.
Chondrosarcoma of submaxillary gland	1	...	1	...	...	...	...	...	
Epithelioma of tongue	4	2	1	1	...	...	...	...	
„ gum	3	2	...	...	...	...	...	1	
„ floor of mouth	1	1	...	...	...	...	...	...	
Carcinoma of floor of mouth	2	...	...	2	...	...	...	...	
Fibrous stricture of œsophagus	2	2	...	...	...	...	...	...	
Malignant stricture of œsophagus	3	2	1	...	...	...	...	...	

DISEASES.	Total.	Cured or relieved.		Unrelieved.		Died.		Still under treatment.	Remarks.
		M.	F.	M.	F.	M.	F.		
LOCAL DISEASES.									
Digestive system, continued—									
Malignant disease of stomach	2	...	...	1	1	...	...	...	
Fibrous stricture of pylorus	1	...	...	...	...	...	1*	...	* Died of exhaustion after exploratory laparotomy.
Hydatid cyst of liver .	1	...	...	...	...	...	...	1	
Impacted gall-stones .	2	...	1	...	...	...	1*	...	* Causing intestinal obstruction. Shock after operation.
Intestinal obstruction .	1	...	...	...	...	1*	...	...	* Died of asthenia.
Appendicitis . .	2	1	...	...	...	...	...	1	
Malignant disease of intestine (including rectum)	7	2	2	1	...	...	2*	...	* Both rectal cases, and died of exhaustion after colotomy.
Non-malignant ulceration of rectum	1	...	1	...	...	...	...	...	
Prolapse of rectum .	6	1	3	...	1	...	...	1	
Rectocele . . .	1	...	...	...	1	...	...	...	
Fistula in ano . .	22	19	2	1	...	...	...	...	
Fissure in ano . .	7	4	2	...	1	...	...	...	
Hæmorrhoids . .	21	8	12	...	...	...	...	1	
Ischio-rectal abscess .	2	2	...	...	...	...	...	...	
Fæcal fistula . .	3	1	1	...	...	...	...	1	
Hernia—									
Inguinal . . .	92	75	9	2	...	...	...	6	2 recurrent cases; 2 with bladder associated in hernia (1 reported).
Femoral . . .	10	...	7	...	2*	...	...	1	1 recurrent. * 1 had malignant disease and 1 refused operative treatment.
Umbilical. . .	4	1	3	...	...	...	...	...	
Strangulated . .	5	3	1	...	...	1*	...	...	2 femoral—1 male, 1 female; 1 reduced by taxis. * Died of sapræmia, a large piece of gut being found gangrenous at the operation.
Circulatory system—									
Varicose veins . .	34	20	9	...	...	1*	...	4	* Transferred to medical wards with acute cellulitis, and died with embolic infarctions in both lungs.
Nævus . . .	6	2	4	...	...	...	...	...	
Phlebitis . . .	1	...	1	...	...	...	...	...	
Arterio-venous aneurism of lateral sinus	1	1	...	...	...	...	...	...	
Lymphatic system—									
Lymphangitis . .	3	2	1	...	...	...	...	...	
Lymphadenitis . .	2	2	...	...	...	...	...	...	
Adenoids . . .	6	3	3	...	...	...	...	...	
Lymphoma . . .	1	...	...	1	...	...	...	...	
Lymphadenoma . .	4	3	...	1	...	...	...	...	
Tubercular glands .	71	32	28	1*	3*	...	1†	6	* Declined treatment; 2 had marked pulmonary tuberculosis. † Died of shock after operation.
Lympho-sarcoma . .	1	...	...		1	...	...	...	

DISEASES.	Total.	Cured or relieved.		Unrelieved.		Died.		Still under treatment.	Remarks.
		M.	F.	M.	F.	M.	F.		
LOCAL DISEASES—									
Lymphatic system, continued—									
Epithelioma*	4	4	...	...	...	...	...	...	* Cases in which the affection of the glands has appeared after the removal of the primary growth and the discharge of the patient.
Respiratory system—									
Laryngitis	1	...	1	...	...	...	...	...	
Empyema	6	3	2	1	...	...	...	...	
Sarcoma of posterior nares	1	1	...	...	...	...	...	...	
Hydatid of anterior mediastinum	1	...	1	...	...	...	...	...	
Nervous system—									
Hysteria	2	...	1	...	1	...	...	...	
Neuritis	3	1	2	...	...	...	...	...	
Tic-douloureux	5	2	1	...	...	1	1	...	
Exophthalmic goitre	3	1	1	...	...	1	...	...	
Sarcoma of brain	1	1	...	...	...	...	...	...	
Genito-urinary system—									
Floating kidney	3	...	3*	...	...	...	...	...	* 1 was hydronephrotic.
Renal calculus	5	3	...	...	1	1*	...	...	* Kidney almost disorganised by suppuration.
Tubercular kidney	3	2	...	...	...	...	1*	...	* Old-standing tubercular disease of kidneys; also tuberculosis of lungs and peritoneum. Transferred from medical wards for nephrotomy. Died of cardiac failure after the operation.
Pyelitis	4	1	2	1	...	...	...	...	
Pyonephrosis	1	...	...	...	1*	...	...	...	* Too far advanced for removal.
Perinephritic abscess	2	1	...	...	...	...	...	1	
Sarcoma of kidney	3	...	...	1	2	...	...	...	
Carcinoma of kidney	1	...	...	...	...	1*	...	...	* Shock after nephrectomy.
Hæmaturia	1	1	...	...	...	...	...	...	
Vesical calculus	3	2	...	...	..	1*	...	...	* Pyelitis; abscesses in liver; suppression of urine after supra-pubic lithotomy.
Cystitis	9	6	3	...	...	...	...	...	
Perinæal abscess	3	3	...	...	...	...	...	...	
„ fistula	6	4	...	1	...	...	...	1	
Stricture of urethra	4	3*	...	...	...	1†	...	...	* 1 case had retention. † Died with surgical kidneys. No operation had been done.
Phimosis	1	1	...	...	...	...	...	...	
Hypospadias	1	1	...	...	...	...	...	...	
Incontinence of urine	1	1	...	...	...	...	...	...	
Undescended testicle	9	8*	...	...	...	...	...	1	* 1 was inflamed.
Tubercular testicle	6	4	...	1	..	...	...	1	
Hydrocele	12	10*	...	...	...	...	...	2	* 1 encysted of the cord.
Varicocele	30	27	...	...	...	...	...	3	
Ruptured vas deferens	1	1*	...	...	..	...	..	...	* Castration done (reported in 'Lancet').
Senile enlargement of prostate	3	2	...	...	...	...	...	1	
Ovarian tumour	4	...	4	...	...	...	...	...	
Recto-vaginal fistula	1	...	1	...	...	...	...	...	

DISEASES.	Total.	Cured or relieved.		Unrelieved.		Died.		Still under treatment.	Remarks.
		M.	F.	M.	F.	M.	F.		
Local Diseases—									
Genito-urinary system, continued—									
Ruptured perinæum	2	...	2	...	...	...	...	...	
Breast—									
Mastodynia	1	...	1	...	...	...	...	...	
Chronic hypertrophy	1	...	1	...	...	...	...	...	
Abscess	5	...	3	...	...	...	...	2	
Tubercular disease	3	...	3	...	...	...	...	...	
Cysts	4	...	3	...	1	...	...	...	
Fibro-adenoma	5	...	5	...	...	...	...	...	
Carcinoma	23	2	17	...	2	...	2*	...	* Both died of shock after operation.
Sarcoma	1	...	1	...	...	...	...	...	
Nævus	1	...	1	...	...	...	...	...	
Thyroid gland—									
Adenoma	4	...	3	...	1	...	...	...	
Cystic goitre	3	2	1	...	...	...	...	...	
Exophthalmic goitre (see under Nervous Diseases)	...	...	...	...	...	...	...	...	
Osseous system—									
Periostitis	9	7	2	...	...	...	...	...	
Osteitis	6	4	1	...	...	...	...	1	
Tubercular disease (other than spine)	11	6	5	...	...	...	...	...	
Tubercular disease of spine	22	10*	6	2	2	...	...	2	* 1 had paraplegia.
Acute necrosis	1	...	...	...	...	1*	...	...	* Died of asthenia.
Necrosis	21	11	5	...	1	...	...	4	
Abscess of tibia	1	...	...	1	...	...	...	...	
Gumma of clavicle	1	1	...	...	...	...	...	...	
Chondroma of thumb	1	...	1	...	...	...	...	...	
„ scapula	1	...	...	...	...	...	...	1	
Osteoma	3	...	2	...	1	...	...	...	
Sarcoma of skull	1	...	...	1	...	...	...	...	
„ maxilla	5	2	2	...	1*	...	...	...	* Declined operation.
„ vertebræ	1	...	...	...	1	...	...	...	
„ sacrum and ilium	1	...	...	...	1*	...	...	...	* Too extensive for operation.
„ tibia	1	1	...	...	...	...	...	...	
Ununited fracture	3	2*	...	...	...	1†	...	...	* 1 of clavicle; 1 of tibia. † Of femur. Died of sarcoma of lung and pericarditis.
Joints—									
Synovitis of knee	7	5	2	...	...	...	...	...	
Tubercular arthritis—									
Of shoulder	1	1	...	...	...	...	...	...	
„ elbow	6	3	2	...	...	...	...	1	
„ wrist	3	1	2	...	...	...	...	...	
„ sacro-iliac articulation	1	1	...	...	...	...	...	...	

DISEASES.	Total.	Cured or relieved.		Unrelieved.		Died.		Still under treatment.	Remarks.
		M.	F.	M.	F.	M.	F.		
LOCAL DISEASES—									
Joints, continued—									
Of hip . . .	25	8	12	...	...	1*	1†	3	* Died of shock after amputation at hip. † Died of shock after excision of hip.
„ knee . . .	18	6	9	1	...	2*	...	...	* Died of shock after operation.
„ ankle . . .	5	1	4	...	...	...	...	...	
Rheumatoid arthritis .	6	1	2	1	...	...	...	2	
Syphilitic arthritis .	1*	...	1	...	...	...	...	...	* Knee.
Septic arthritis . .	1*	1	...	...	...	...	...	...	* Knee.
Loose semilunar cartilage	3	2	1	...	...	...	...	...	
Anchylosis . . .	3*	2	1	...	...	...	...	...	* 2 of wrist; 1 of elbow.
Muscles, fasciæ, tendons, bursæ—									
Torticollis . . .	2	1	...	...	...	...	1*	...	* Died under chloroform.
Chronic myositis . .	1	1	...	...	...	...	...	...	
Myoma . . .	1*	...	1	...	...	...	...	...	* Of rectus femoris.
Hydatid . . ,	1*	1	...	...	...	...	...	...	* Of sartorius.
Contracted palmar fascia	1	1	...	...	...	...	...	...	
„ tendon .	1	...	1	...	...	...	...	...	
Dislocated tendon .	1	...	1*	...	...	...	...	...	* Peroneal.
Tubercular tenosynovitis	2	1	1	...	...	...	...	...	
Acute bursitis . .	2	...	2	...	...	...	...	...	
Chronic bursitis . .	10*	2	6	1†	...	...	...	1	* 7 patellar; 3 popliteal. † Declined operation.
Tubercular bursitis .	2*	1	1	...	...	...	...	...	* Over great trochanter.
Suppurative bursitis .	2	1	1	...	...	...	...	...	
Skin and appendages and subcutaneous and cellular tissue—									
Callous ulcer . .	5	3	2	...	...	...	...	...	
Tubercular ulcer . .	6	2	2	...	...	...	...	2	
Syphilitic ulcer . .	4*	1	2	...	...	...	...	1	* 2 of soft palate.
Rodent ulcer . .	4	3	...	1	...	...	...	...	
Lupus	13	4	8	...	...	...	...	1	
Cellulitis . . .	18	9	8	...	1*	...	...	...	* Pelvic cellulitis.
Acute abscess . .	17	7	8	...	...	...	...	2	
Tubercular abscess .	6	3	2	...	...	1*	...	...	* Died of shock and exhaustion.
„ sinus* .	18	9	2	...	...	...	...	2	* Not connected with glands or bones.
Sinus connected with sutures	2	2	...	...	...	...	...	...	
Carbuncle . . .	2	1	1	...	...	...	...	...	
Onychia tendinosa .	1	1	...	...	...	...	...	...	
Dermoid cysts . .	6	2	4	...	...	...	...	...	
Sebaceous cysts . .	3	3	...	...	...	...	...	...	

DISEASES.	Total.	Cured or relieved.		Unrelieved.		Died.		Still under treatment.	Remarks.
		M.	F.	M.	F.	M.	F.		
LOCAL DISEASES—									
Skin and appendages and subcutaneous and cellular tissue, continued—									
Lipoma	10	2	8	...	...	...	...	...	
Papilloma	1*	1	...	...	...	...	...	...	* Around artificial anus.
Epithelioma	3	1*	...	2†	...	...	...	...	* Of arm. † 1 of neck; 1 of foot.
Carcinoma	2	...	2*	...	...	...	...	...	* Pigmented, recurrent, of abdominal wall; microscopically definitely carcinoma.
Sarcoma	1*	...	1	...	...	...	...	...	* Of thigh.
Deformities—									
Contraction after burn	1	...	...	...	1*	...	...	...	* Too bad for operation.
Wasted arm	1	1	...	...	...	...	...	...	
Mal-union after fracture	2*	2	...	...	...	...	...	...	* 1 of tibia; 1 of ulna.
Contracted finger	1	...	1	...	...	...	...	...	
Old dislocated hip	1	...	...	1*	...	...	...	...	* Declined operation.
Malposition of knee	1	...	1	...	...	...	...	...	
Genu valgum	6	3	2	1	...	...	...	...	
„ varum	1	...	1	...	...	...	...	...	
Bent tibia	1	1	...	...	...	...	...	...	
Talipes	12*	8	4	...	...	...	...	...	* 4 equino-varus; 4 varus; 4 equinus.
Hallux valgus	2	...	2	...	...	...	...	...	
Hammer-toe	4	2	2	...	...	...	...	...	
Malformations—									
Harelip	13	7	5	1	...	...	...	...	
Cleft palate	20	5	12	1	1	...	...	1	
Supernumerary rib	1	...	1	...	...	...	...	...	
Webbed fingers	1	1	...	...	...	...	...	...	
Polydactylism	1	1	...	...	...	...	...	...	
Miscellaneous and medical—									
Hydrocephalus	1	1	...	...	...	...	...	...	
Ascites	1	...	1	...	...	...	...	...	
Localised peritonitis	4*	2	...	...	...	...	...	2	* 1 tubercular.
Tubercular peritonitis	2	...	...	1	1	...	...	...	
Suppurative peritonitis	1	...	...	...	...	...	1*	...	* Died of exhaustion.
Malignant disease of peritoneum	1	...	...	...	...	1	...	...	
Abdominal tumour	2	1	...	1	...	...	...	...	
Constipation	1	...	1	...	...	...	...	...	
Paroxysmal hæmoglobinuria	1	...	...	1	...	...	...	...	
GENERAL INJURIES—									
Shock	3	3	...	...	...	...	...	...	
Burns	11	3	5	...	...	1	2	...	

DISEASES.	Total.	Cured or relieved.		Unrelieved.		Died.		Still under treatment.	Remarks.
		M.	F.	M.	F.	M.	F.		
GENERAL INJURIES, *continued*—									
Frostbite	1*	1	...	...	...	...	...	...	* Foot amputated.
Sunstroke	1	1	...	...	...	...	...	...	
LOCAL INJURIES—									
Head—									
Concussion	5	3	2	...	...	...	...	...	
Cephalhæmatoma	1	1	...	...	...	...	...	...	
Scalp wounds	8	3	3	...	...	1*	...	1	* Died of suppurative meningitis.
Gunshot wounds	1	...	...	...	...	1*	...	...	* Central intra-cranial hæmorrhage.
Fractured vault	5	3	1	...	...	1*	...	...	* Lacerated brain.
,, base	1	...	...	...	...	1	...	...	
,, jaw	5	3	1	...	...	...	...	1	
Dislocated jaw	1	1	...	...	...	...	...	...	
Neck—									
Cut throat	2	...	...	...	...	2*	...	...	* 1 had also penetrating chest wound.
Stabs in neck	1	...	1	...	...	...	...	...	
Chest—									
Contusions	3	3	...	...	...	...	...	...	
Fractured ribs	3	1	1	...	...	1*	...	...	* Pneumonia supervened.
Gunshot wound	1	1	...	...	...	...	...	...	
Abdomen—									
Contusions	2	1	1	...	...	...	...	...	
Ruptured liver	1	...	...	...	...	...	1	...	
Pelvis—									
Fractured coccyx	1	...	1	...	...	...	...	...	
Back—									
Contusion	1	1	...	...	...	...	...	...	
Hæmatoma in loin	1	...	...	...	...	1*	...	...	* Died of delirium tremens.
Upper extremity—									
Fractured clavicle	1	...	1	...	...	...	...	...	
Wound of shoulder	1	...	1	...	...	...	...	...	
Fractured humerus	4	3	1	...	...	...	...	...	
Wound of arm	3*	3	...	...	...	...	...	...	* Axillary vein wounded in 1 case.
Fractured forearm	2	1	1	...	...	...	...	...	
Wound of wrist	4	2	2	...	...	...	...	...	
,, hand	3	3	...	...	...	...	...	...	
Gunshot wound of hand	1	1	...	...	...	...	...	...	
Hand torn off by machinery	1	1	...	...	...	...	...	...	
Finger torn off by machinery	1	1	...	...	...	...	...	...	
Compound fracture of thumb	1	1	...	...	...	...	...	...	

DISEASES.	Total.	Cured or relieved.		Unrelieved.		Died.		Still under treatment.	Remarks.
		M.	F.	M.	F.	M.	F.		
LOCAL INJURIES, *continued—*									
Lower extremity—									
Dislocated hip . .	1	...	1	...	...	...	...	...	
Fractured femur . .	8	7	1	...	...	...	...	...	
„ patella .	9*	8	...	...	...	...	...	1	* All wired. 8 have done excellently, and 1 is still under treatment and doing perfectly well.
Penetrating wound of knee-joint	1	...	1	...	...	...	...	...	
Extensive lacerated wound of knee-joint	1	...	...	...	...	1*	...	...	* Alcoholic subject. Died of exhaustion.
Simple fracture of tibia and fibula	7	6	1	...	...	...	...	...	
Compound fracture of tibia and fibula	2	...	1	...	...	...	...	1	
Pott's fracture . .	2	2	...	...	...	...	...	...	
Sprained ankle . .	1	...	1	...	...	...	...	...	
„ foot . .	1	1	...	...	...	...	...	...	
Injured foot* . .	6	5	1	...	...	...	...	...	* Includes fractured metatarsals.
	1066	543	348	34	32	27	17	65	
	1066	891		66		44		65	

CASES OF INTEREST

UNDER THE CARE OF MR. WILLIAM ROSE.

TIC-DOULOUREUX.

THE results of various operations which I have performed for the relief of intractable tic are, on the whole, encouraging, and go to demonstrate that nothing short of dealing with the branches of the trigeminal nerve close to the base of the skull, or with the Gasserian ganglion itself, or even better dividing the main nerve-trunk behind the ganglion, is likely to give permanent relief. In earlier days, in common with other surgeons, I was in the habit of dealing with the peripheral portion of the nerves, but have now entirely discarded this practice, feeling it to be utterly futile in view of the certain recurrence of the pain. Consequently if the neuralgic symptoms are mainly limited to the second division, I now attack the nerve at its exit from the foramen rotundum by what is known as the Braun-Lossen operation; if the third division is mainly implicated, I find the best plan is to divide it at the foramen ovale by deepening the sigmoid notch as practised by Victor Horsley, always excising as large a portion of the nerve as is obtainable; whilst if both second and third divisions are seriously involved, the only hope of giving relief consists either in removal of the ganglion, or in division of the trunk as it emerges from the pons.

During the last twelve months I have dealt with three cases by the Braun-Lossen method, of which one was performed in the hospital. A fourth case was undertaken by Mr. Carless during my absence in the summer. The ages of these patients were respectively 65 (male), 62 (female), 59 (male), and 45 (male). All but one had undergone previous operations with a varying amount of benefit, but in all recurrences had followed. In each case the nerve was reached without difficulty, and clearly demonstrated as it traversed the spheno-maxillary fossa. A portion about ¾ inch in length was easily removed, and comparatively little hæmorrhage complicated the proceedings. The zygoma united without any trouble, complete asepsis prevailed throughout, and the resulting scars were scarcely observable.

Only one case has presented itself in which it was thought advisable to attack the Gasserian ganglion itself. This was in a male aged 66, who had suffered from epileptiform tic for many years, and had previously undergone two or three extra-cranial operations at the hands of Mr. Victor Horsley. It was considered by Dr. Ferrier and myself that the only chance of giving him relief was either to remove the ganglion or to divide the cerebral roots behind it. Having received a favorable account of a new method of reaching the ganglion which appears to have been simultaneously practised by Mr. F. Hartley of New York, and Professor Fedor Krause of Altona, I determined to follow it in this instance. An omega-shaped temporal flap, about 2½ inches in diameter and 3 inches high, is marked out, with its base a little above the zygomatic arch, the incision being at once carried down to the bone, and the soft parts left *in situ.* The skull is now cut through along the same line, an angular V-shaped chisel, suggested by Mr. Lane, of Guy's Hospital, being useful, as also one specially constructed for me with a blunt shoulder to prevent it from penetrating too deeply and injuring the dura. The whole flap, consisting of skin, muscle, and bone, is now prised up and turned down, the bone at the base of the flap being broken through. The dura mater is thus reached, and a considerable portion of the middle meningeal artery exposed, from which a good deal of hæmorrhage may be expected. Carefully stripping up the dura with the finger and raspatory along the middle fossa, the petrous portion of the temporal bone is thus laid bare as far as its apex, the temporo-sphenoidal lobe of the brain being gently lifted by suitable spatulæ. In this case, in spite of great care, the dura mater was torn just before reaching the ganglion; this, however, enabled me to see the cerebral root passing to the pons, and considering the collapsed and exhausted state of the patient I contented myself with dividing this and pulling out nearly an inch of its cerebral end. The wound was closed in the usual way, but the flap of bone was not replaced owing to its becoming completely detached from the soft tissues. The patient never fully rallied, and died from exhanstion.

On the whole I was pleased with the operation, having previously practised it on the cadaver. I think it will turn out to be an easier mode of access than the plan which I suggested of trephining from below around the foramen ovale. The ganglion also can be more satisfactorily exposed and dealt with, but whether the manipulation of the temporo-sphenoidal lobe and other contingencies which may happen *en route* will render this method more dangerous to life remains to be proved by further experience. Keen and Mitchell, in a communication to the Philadelphia County Medical Society (February 14th, 1894), collate the results of forty cases, nineteen of which have been operated on according to Hartley's plan, nineteen according to my own, one according to Mr. Horsley's, and one by a method unknown. Out of Hartley's nineteen two deaths have occurred, this case making three deaths out of twenty; of the nineteen treated according to the plan I suggested there have been two deaths, one in my own practice and the other in America. One reason that determined me in attempting Hartley's method in this case was that several previous operations had been undertaken in the pterygoid region which had probably considerably disturbed the normal anatomy of the parts. I should add that the patient occasionally lapsed into a semi-maniacal condition from the severity of the paroxysms, and was also greatly debilitated and anæmic; the operation was only performed as a last resource at his special request and that of his friends.

THE RADICAL CURE OF INGUINAL HERNIA.

The experience gained by the year's work may be usefully considered under the following heads :—(1) The treatment of the sac; (2) the efficient strengthening of the inguinal region with or without displacement of the structures of the cord.

(1) As regards transfixion and ligature of the sac a little above the level of the internal abdominal ring, and its removal below this point, I still adhere to this method rather than to the plan advocated by Prof. MacEwen, of using the doubled-up sac as a pad on the inner aspect of the canal. In fact, in many cases of bubonocele, on which I have operated during the year, the sac was so delicate and fragile that it would have been impossible to perform the necessary manipulation required in the latter operation. Latterly I have invariably used fine silk boiled in carbolic lotion (1 in 20) in preference to catgut for the ligature of the sac.

(2) The treatment of the abdominal parietes varies considerably according to the developmental peculiarities of the part; for whilst in many cases it is easy to define with the finger and transfix with a suitable hernia needle the conjoined tendon, yet in others this structure is so weak as to render this impracticable. The same may also be said of Poupart's ligament. Under such circumstances I think it is better to more thoroughly expose the region by opening up the aponeurosis of the external oblique, and systematically suturing the arched fibres of the internal oblique to the under surface of Poupart's ligament, or to any fascial structures in the neighbourhood. For this purpose I have also used silk, varying in thickness according to the age of the patient and the consistence of the parts. The external oblique is then reunited by fine catgut sutures. In two cases only have I tried the displacement of the cord according to Bassini's method, and cannot, therefore, at present express any very definite opinion as to the value of the proceeding, or its effect upon the testicle.

It is satisfactory to note that out of thirty cases operated on, no septic trouble has arisen, except in one instance;

whilst in one or two cases there has been a little stitch suppuration, showing some failure in the preparation of the catgut employed.

The following case presents so many points of interest as to render it worthy of special notice in these pages. It was one of strangulated inguinal hernia in a coachman aged fifty-one, and inasmuch as it terminated fatally an account of it will also be found in the post-mortem records (p. 242). I only intend, therefore, to allude here to the most salient features. The symptoms which the patient complained of on admission were so slight, that the existence of strangulation was hardly suspected. The general condition was good, the countenance free from anxiety, and he walked into hospital stating that, with the exception of a little abdominal pain, he never felt better in his life. The local signs were also by no means clear; there was a tense irreducible swelling in the inguinal region extending to the scrotum, and without impulse on coughing, which, seeing the man's state of comparative comfort and the absence of local tenderness, at first suggested the idea that a hæmatocele might be present. No effect was produced by taxis, and so following the useful surgical rule, "When in doubt, operate," I determined to make an exploratory incision. A considerable quantity of turbid, bloody fluid was evacuated from the sac, which was much thickened. It was then found that a coil of intestine was completely strangulated, and the lower portion showed signs of incipient gangrene. A large piece of discoloured omentum was also removed. Since the patient's general condition was so satisfactory, I determined to divide the constriction, and to leave the protruded gut *in situ,* thus giving it a chance of recovery. On the following day, however, it was found black, hopelessly sphacelated, and very offensive; a free incision was made into it, and the superficial part removed. In the course of a few days the gangrenous process spread to the lips of the wound, and not till then did the patient show any signs of general depression. These, however, soon became very marked, and in spite of the removal of sloughing tissues, and a free application of pure carbolic acid and iodoform, the patient rapidly sank, and died of toxæmia on the eighth day.

On reviewing the course of the case and its treatment, one cannot help asking the question whether primary resection of the affected bowel might not have given the man a better chance. The circumstance that deterred me from this was the general state of the patient, leading me to hope that, in spite of the unfavorable local conditions, the tissues might recover themselves after the relief of all tension. Probably, even had primary resection been adopted, the result would have been the same, since it was quite evident that there was extensive local infection of all the tissues in the neighbourhood at the time I operated.

THE TREATMENT OF FRACTURED PATELLA.

Owing to statements that have been often made and recently repeated in medical papers that the results of our treatment of fractured patella by the open method are unsatisfactory, it is desirable that on this the first occasion of publishing a "Hospital Report" we should draw special attention to this gross, and one would almost think wilful perversion of truth. During the past twelve months eight cases have been admitted into the hospital and treated by the various surgeons in this way; all occurred in men, and were caused by muscular violence; in all a perfectly aseptic course was maintained, and all the patients ultimately regained free movement of the knee. (Another case was in the hospital at the end of September, was wired, and did well.)

As regards the details of the operation, I have been in the habit of exposing the seat of fracture by turning up or down a flap of skin. By this means the parts involved are more easily dealt with, and the resulting cicatrix is situated away from both the line of fracture and the skin on which the patient kneels. As a rule the fracture communicates with the joint, but I desire to record a condition which occurred in one of my cases this year, and in two others previously. I found that the seat of fracture was sealed off from the joint by a thin film or screen of pale yellow newly organised lymph. After clearing away all blood-clot and cleaning the recently fractured surfaces I was able to drill them and accurately match up the fragments without interfering with this layer; consequently the operation was to all intents and purposes extra-articular. I have no doubt that the above-mentioned layer became ultimately absorbed with the subsidence of activity as the patella united. It is most important that the fragments should be so drilled as to include the whole thickness of the bone without impinging on the articular cartilage; also that when the wires are drawn tight the two segments fit exactly together just as two portions of broken china.

In another of my cases the fracture had existed for several months, and the patient had been treated by the application of Malgaigne's hooks at another hospital, but without success. It was necessary, in order to approximate the fragments, to freely divide the vasti and rectus muscles some distance up the thigh. The surfaces of bone also required refreshing by the removal of a thin slice by the saw, for owing to the length of time which had elapsed since the accident, the natural process of repair had removed the original irregularities of the line of fracture so useful in accurately adjusting the fragments.

PULSATING SWELLING IN THE NECK CAUSED BY A SUPERNUMERARY RIB.

This is the second case of this condition which I have had the opportunity of treating within the last two years. It occurred in a young married woman aged 26, who had noticed a swelling at the root of the neck on the left side just above the clavicle for six years. It had become painful during the last twelve months, the pain being of an aching character, which extended backwards to the shoulder. The swelling was not very circumscribed, but was ovoid in shape, with a long diameter of about 1½ inches, hard, immoveably fixed to the deeper parts, and not especially tender on pressure over it. The most marked feature presented by it was in the existence of pulsation, which, however, was rather of a heaving than of an expansile character, and was not to be felt all over the swelling, but only along a certain area. No bruit could be detected over it on auscultation. There was but little deformity caused by the swelling, and the skin was not adherent to it. During her stay in hospital, pain down the left arm and into the index and middle fingers became somewhat troublesome. The pulsation was evidently not due to a subclavian aneurism, being too limited in extent and not expansile in character. It felt exactly as if the subclavian artery had been lifted by some growth beneath it, and the presence of a supernumerary rib passing from the transverse process of the seventh cervical vertebra to the first rib displacing the vessel was diagnosed.

Accordingly, on December 8th I made an incision two inches in length over the centre of the swelling and in the line of the subclavian trunk. The artery readily came into view, and was carefully displaced from the subjacent mass by a raspatory, and held downwards and forwards together with the lowest cord of the plexus by a retractor. A cartilaginous mass was now seen passing from the transverse process of the seventh cervical vertebra to the first rib. The attachments were carefully chiselled through, and the mass removed by sequestrum forceps and elevator, exposing the dome of the pleura, which was, however, uninjured. The wound was closed and drained, and did well, being healed within a week.

The portion removed consisted almost entirely of cartilage, and was in two pieces, each about an inch long ; there was a distinct articular facet between them.

REPORT ON CASES

UNDER THE CARE OF MR. WATSON CHEYNE.

During the past year 308 cases have been under my care, not including, of course, the cases still under treatment on September 30th, 1894, and therefore incomplete. Of these, 61 did not undergo any operation, while the remainder were operated on ; and as in several instances, such as radical cure of hernia, the operation was performed at different times on two sides of the body, the total number of cases operated on comes to 268.

Of these 308 cases, 15 died, 8 of these deaths occurring among the 61 cases which were not operated on, while 7 occurred in cases which had been operated on. Among the latter, however, only one death was in any way due to the operation. As regards the fatal cases which occurred in patients who had not been operated on, they are of comparatively little interest, and I may sum them up in a few words.

1. Death from chloroform.—The patient, æt. 20, was admitted with exophthalmic goitre, and it was proposed to remove one half of the thyroid gland. He was placed under chloroform in a room adjoining the theatre, as is the usual practice, the chloroform being administered by the house surgeon ; and when he seemed to be nearly under, the table was wheeled into the theatre. When he reached the theatre it was found that the patient was dead, and although a long time was spent in efforts to restore him, &c , they were entirely without avail.

2. A woman æt. 32, who was kicked in the abdomen, with the result, as found on post-mortem examination, that the right lobe of the liver was ruptured (it was a cirrhosed liver and contained gummata), and the abdomen was filled with blood. This patient lived for a little over four days. No operative interference was attempted, and post-mortem examination showed that none would have availed.

3 was a case of *acute necrosis* of the tibia, admitted about three weeks after the commencement of the disease. It had been opened outside the hospital in three places. The patient was in a very bad condition when admitted—profuse discharge, much pain, the greater part of the tibia bare, and he was in a very emaciated condition. He was in the hospital for sixteen days, and died from general exhaustion. Nothing was done in the way of operation, owing to the very serious state of the patient.

4 was a woman æt. 48, sent in with jaundice, and supposed to be suffering from gall-stones. On examination, however, a nodular mass was felt in the neighbourhood of the gall-bladder and the liver, and it was evident that she was suffering from a malignant disease. No operation was performed. Eight days after admission there was violent epistaxis, which could only be controlled by a Cooper-Rose plug, and began again whenever the plug was removed. She was transferred to the medical wards, and died of exhaustion twelve days after admission. A mass of malignant disease was found on the surface of the liver, involving the common bile-duct. The growth was a carcinoma.

5 was a case of fracture of the base of the skull. He died a few hours after admission.

6 was a case of extensive scald in a little child a year old. She died within two days after admission. On post-mortem examination, twenty-four hours after, the following was the state of matters :—Extensive scalds over arms and back ; thoracic organs normal; perforation of duodenum the size of a sixpenny piece, edges quite smooth ; liver smooth and pale, but, on section, looking cirrhotic, microscopically very extensive fatty degeneration, some of the ducts blocked with mucus ; spleen large, hard, and dark, with small white spots, microscopically very full of blood, cells of

Malpighian bodies multiplying ; kidneys normal. The early occurrence of ulcer of the duodenum is very noteworthy.

7 was a child, æt. 1 year, suffering from general tuberculosis and septic endocarditis. No operative treatment. She died next day.

8 was a case of uræmia in connection with old-standing bone disease. She also died in two days.

The following cases died after operation, but in only one instance was the result in any way connected with the operation. In the other cases the patients died of the diseases from which they were suffering.

The case in which the death was connected with the operation was one of extensive malignant disease of the breast and axilla in a woman aged forty-seven, who was in a feeble condition when admitted. An extensive operation was performed, the anæsthetic used being nitrous oxide, followed by ether. The operation lasted about an hour. Towards the end of it the patient became very collapsed, and had much mucus in the throat which she was unable to bring up, and in spite of an injection of strychnine and ether she died five minutes after she was put to bed. In this case I believe that the death was as much due to the ether as to the shock of the operation, and that it essentially resulted from asphyxia due to the excessive secretion of mucus set up by it. In her weak condition, and as the result of the operation, she was unable to empty her bronchial tubes, and therefore the blood became insufficiently oxygenated.

The following were the other cases of death in patients who had been operated on, but who, as will be evident from the description, died from the disease for which they were under treatment, and not as the result of the operative interference.

1. A man æt. 50, admitted half an hour after having cut his throat. The larynx was completely severed and the pharynx cut into. The sterno-mastoids were injured, but the vessels had escaped. The house surgeon on admission performed tracheotomy and inserted a Hahn's tube, and he also placed a feeding-tube into the œsophagus. The sepa-

rated pieces of the thyroid cartilage were then united by silver sutures, the epiglottis being also stitched in position and the wound closed, drainage-tubes being inserted at the angles. The patient passed a very restless night, and next day his breathing was difficult and he had much coughing. On the third day the breathing became more laboured, slight dulness was observed over the whole of the lungs, the cough became constant, and he died about three days after admission. On post-mortem examination there was found to be great œdema of both lungs, but no pneumonia. There was slight meningitis, slight interstitial nephritis, œdema of the larynx, and very little hæmorrhage into the trachea. Death here was no doubt due to some infective process introduced at the time of the injury, and had he lived he would in all probability have developed pneumonia, and possibly cerebro-spinal meningitis.

2. A case of suppurative peritonitis in a woman æt. 25. No post-mortem was permitted, and the exact origin of the suppuration was not ascertained. The history was that she had a miscarriage (six and a half months) six weeks before admission, the fœtus having been evidently dead for some time. On the following evening she suffered from violent pain in the abdomen, followed by septicæmic symptoms, for which she was treated under the name of typhoid fever. For the last month before admission the abdomen had been increasing in size and became very tender. Four days before admission it was tapped, and the patient stated that four or five pints of pus were withdrawn. The woman was in an extremely feeble, weak condition, her temperature ranging from 103° to 104°, with constant diarrhœa and sickness, and much pain. A small incision was made in the middle line, and drainage-tubes were slipped into the peritoneal cavity. A quantity of foul gas rushed out, followed by about a pint and a half of extremely foul-smelling pus. A probe was also passed towards the flanks, and small counter openings made, through which drainage-tubes were also inserted. She lived for about two days after the insertion of the drainage-tubes, but the symptoms of diarrhœa and vomiting and the profuse suppuration continued.

3. A man æt. 30, whose left knee two and a half months before admission became swollen, and he had an acute illness. After a few days his knee was tapped, and later it was opened and poulticed. Fresh abscesses formed in the thigh, and treatment by poulticing was continued. No efficient drainage was employed. When admitted the patient was almost moribund, with discharging sinuses about his knee, through which a probe passed to bare bone both in the joint and high up the femur. Nothing could be done beyond the insertion of a few drainage-tubes through the various sinuses, and in one or two places where the skin was thin the undermined skin was slit up. The patient continued in the same condition as before, and died two and a half days after admission.

4. *Suppurative meningitis.*—A boy æt. 11, a few days before admission, fell and cut his head. Strapping was applied to the head, but suppuration occurred underneath the strapping, and the patient became very ill. Immediately after his admission he had a severe rigor, and the temperature rose to 105·8° F. On the right side of the head, over the upper and posterior part of the parietal bone, there was a wound in the skull of about an inch and a half long, at the bottom of which the bone was bare. The scalp all round was very boggy and inflamed, and pressure anywhere over it caused great pain; there was also tenderness on pressure over the internal jugular vein. The patient was conscious, but complained of intense pain in his head. There was no paralysis. The patient was at once anæsthetised, the wound opened up, and a trephine applied over the bare portion of the bone, and a little pus was found beneath. As the membranes bulged very markedly, a needle was pushed through the dura mater into the brain, but no pus was found. A number of incisions were also made through the boggy part of the scalp, and pus was squeezed out in all directions, the condition as regards the scalp being evidently one of *diffuse cellulitis.* On the following day the patient was rather better, but the temperature went up again in the evening, though not so high as on the previous occasion. He became delirious during the night, and vomited much, and redness was found to be extending

from the scalp on to the face; in fact, erysipelas had developed. He was accordingly sent to the isolation wards, where he remained till November 23rd. On his readmission under my care the wounds were looking fairly healthy, but he still had occasional vomiting, and complained of pain in the head. On examination of the eyes the following condition was found:—On the left disc, vessels engorged, edge of disc blurred, no definite papillitis; on the right side there had been papillitis, vessels still bent forward. On November 30th the temperature became subnormal. He began to vomit, the pulse was 52, he was very drowsy, complained of severe headache, the right pupil was widely dilated. On December 1st, as his condition was getting worse, the scalp was again shaved, and an incision was made through the dura mater, which was still exposed at the bottom of the previous trephine wound. A quantity of pus at once escaped, which appeared to well up from below and in front. Two drainage-tubes were inserted. On December 4th *hernia cerebri* had occurred, but the boy's general condition was distinctly better than before the operation. On December 6th, however, he was much worse, the *hernia cerebri* was larger, the pulse had become slower, but no pus could be obtained on inserting a sinus forceps into the protrusion, nor on making a fresh trephine hole further forward. The patient died on December 11th, and on post-mortem examination the following was the state of matters:—Thoracic and abdominal organs normal. Beneath the opening in the skull the brain substance was broken up and infiltrated with blood, and for some distance around it was brown from blood-staining. The surface of the right hemisphere was covered with pus, especially by the sides of the vessels, but the pus could be scraped off. The convolutions were considerably flattened on the right side, but the lateral ventricle was not dilated. No excess of subarachnoid fluid. The choroid plexus on the right side was infiltrated with pus.

5. *Malignant tumour of the abdomen.*—This patient, æt. 41, was sent down from the medical wards with a large mass in the abdomen, which had increased very rapidly within the last two days. A small exploratory incision was made into the swelling, and a quantity of blood was found, the

rapid increase in the size of the tumour being evidently due to hæmorrhage into it. Blood poured out from the wound to such an extent that nothing further was attempted, and it was necessary to plug the wound. He died four days after the exploration. On post-mortem examination a mass of malignant tissue with hæmorrhages into it in all directions was found filling up the whole of the abdomen. Numerous secondary nodules were present in the liver and all over the omentum. It probably began in connection with the prostate.

6. *Sarcoma of the lung.*—The patient was admitted on November 11th, with a history that about six weeks previously he fell off a ladder and broke his leg in three places. The fracture through the thigh, two or three inches above the condyles, had not united, the fragments not being in apposition; the fractures in the leg had, however, united. The patient suffered much pain on every movement, in spite of the application of splints; he was very white and ill; his temperature was about 100° on admission, and his pulse 110; he had some cough. A long splint was applied, but the patient continued to go downhill very rapidly, his cough troubling him much, and some dulness being present in the lung on the right side. He complained extremely of his thigh,—to such an extent, indeed, that in spite of his general bad condition I acceded to his request and wired the fracture on December 6th. So far as the wounds were concerned they healed up without any suppuration, but the patient continued to go downhill, and died on December 18th. On post-mortem examination a large malignant tumour (spindle-celled sarcoma) was found in the lung, and a number of small masses as well. There was also some pericarditis, apparently in connection with an eruption of sarcomatous growths. The wound had healed, but the ends of the femur were apparently healthy, but of course sufficient time had not elapsed for union to have occurred.

Of the 268 operations performed, the great majority were what would be classed under the term of major operations. The cases fairly represent almost all the surgical diseases. The largest number of operations was performed in cases of *tubercular glands in the neck,* of which there were twenty-nine cases, in some instances both sides of the neck being cleared out. As regards these operations, they have all been of the most extensive character, and, indeed, I have now come to consider that if the removal of tubercular glands is to be a success, it must be done very much more thoroughly than is commonly the case. In the majority of these instances the sheath of the jugular vein was adherent to the glands, and the vein itself was removed in many cases along with the mass. The removal of the vein along with the glandular mass renders the operation very much more easy to accomplish, because once the vein is exposed and divided between the ligatures at the lower part of the mass in the anterior triangle, the whole of the glands can usually be very readily peeled up from the structures behind, and it is quite easy to pass a needle round the jugular vein close to its exit from the skull and ligature it again before detaching the mass. A further point of importance is that in all cases it seems advisable to remove the area of fat and small glands which runs obliquely downwards and backwards beneath the sterno-mastoid from the anterior to the posterior triangle, and through the same incision as a rule one can clear out also a considerable part (all the upper portion) of the posterior triangle. There is nothing to remark about these twenty-nine cases. They all did well.

The removal of the jugular vein, and of the material underneath the sterno-mastoid is of especial importance in cases of malignant disease, and I think this ought to be done in all cases where one has to operate on secondary epitheliomatous glands in the anterior triangle. As a matter of fact, there are very few structures in the neck which cannot be dispensed with; and in one case of very extensive malignant glands on one side of the neck recurring after removal of the whole tongue, and where it seemed a pity not to give the patient the further chance, I removed most of the structures in the neck without any bad result, namely, the jugular vein, the carotid artery, digastric and stylo-hyoid muscles, the omo-hyoid, and a portion of the sterno-mastoid, and of course a quantity of fat, &c. In several instances where I have removed secondarily affected glands in the neck along with the jugular vein and the tissues underneath the sterno-mastoid there has been no recurrence in these regions, as so often takes place if only the affected glands themselves are taken away.

About equal in frequency to tubercular glands was the operation for radical cure of *inguinal hernia.* Of these there were twenty-three patients, and as in a number of instances the hernia was double, there were thirty-two operations for radical cure. All of these patients did well, and so far as I can ascertain none of them relapsed, and, indeed, of the number of similar operations which I have done during the last few years I only know of three instances in which relapse has taken place. As regards the operations themselves, as stated in a paper published in the *Lancet* last year, I now perform one or other of two operations according to the severity of the case. Where the hernia is large and the muscles lax I slit up the external oblique tendon from the external to over the internal ring, clear the sac, and perform what is practically Bassini's operation. As regards the treatment of the sac, I formerly used to ligature it at the neck and stitch it up away from the internal ring, but lately I have taken to twisting it thoroughly, and then pushing the twisted sac under cover of the transversalis muscle, and the method seems extremely satisfactory. If the twisted sac is pushed well up it does not uncoil during the further procedures, and the obliteration of the neck of the sac is distinctly more perfect than when ligature is employed. I have in none of the cases had any trouble as regards the sac, which must in most instances be more or less completely deprived of blood; indeed, in the practice of some it has sloughed and been expelled, but this would only occur if the wound were septic. The further procedure in Bassini's operation consists in bringing the internal oblique and transversalis down to Poupart's ligament behind the cord; the external oblique is then again stitched up. In cases where the hernia has been quite small, but where the patient has desired a radical cure—as in boys going in for the army and navy—I have generally contented myself with McEwen's operation, with the difference that the sac is twisted instead of being pursed up in the manner described by him. There is nothing remarkable to note in connection with these cases.

There have also been thirteen cases of removal of *scirrhus of the breast* and axillary contents, and, as has already been stated, one of the patients died at the time of the operation, probably, to a large extent, from the effects of the ether. One of these cases is of sufficient interest to be mentioned more in detail. It was that of a man æt. 59 with scirrhous glands in the right axilla subsequent to the removal of the right breast for the same disease. I operated on him about nine months previously, the disease having then lasted two years, and the axilla being full of enlarged glands. The patient did well up till two months before his re-admission, when he began to suffer from pain in the axilla and swelling of the arm. On examination an induration was found in the axilla of a cord-like character, and there was some œdena of the arm. The axillary scar was dissected out, and a mass of scirrhus was found running along and surrounding the axillary vein, and at one part involving also the artery. As this was the only disease found in the axilla, it seemed worth while making the attempt to remove it; and accordingly the vein was ligatured above and below the mass, the upper ligature being just below the point of entrance of the cephalic vein, and the affected portion of the artery was removed as well. After the operation the arm was quite cold, and remained so for some hours. During the first twenty-four hours the patient suffered great pain in the whole arm, but when it was looked at, at the end of that time, it was found to have completely recovered with the exception of one little spot about the size of a sixpence near the wrist, where it had been resting on a piece of the dressing. The patient recovered without anything further of note.

Among the other cases may be mentioned three of *exophthalmic goitre,* which were admitted with a view to operation. Of these one died under chloroform before the operation was commenced, as has been previously stated. Of recent years the removal of half the thyroid gland for the cure of exophthalmic goitre has been much advocated by several surgeons, more especially in Germany, and apparently a large amount of success has followed this procedure; and on the view that the disease is due to hypersecretion of the thyroid gland, it is quite conceivable that the removal of a portion of that gland may lead to good results. At any rate, whatever the explanation be, the fact is so strongly stated by various surgeons that I felt justified in treating the cases which came under my notice during the past year in this way. The first case was that of a man æt. 25, who had suffered from the symptoms of exophthalmic goitre for about two years, the prominence of the eyeballs dating from about that time. For the last seven months he had suffered very much, had frequent attacks of palpitation occurring on any mental or bodily exertion, tremor of the hands and mouth, and various other symptoms of exaggerated exophthalmic goitre, his condition being so bad that he was incapacitated for his work. He had been treated at various hospitals by the ordinary remedies, but although his health was better there was no improvement as regards the special symptoms. The thyroid gland was considerably enlarged and pulsating, the enlargement being most marked on the right side. The patient having been anæsthetised, an incision was made in the middle line about three inches in length, the right half of the gland was freed from its fascial covering, the vessels entering above and below were tied, and the isthmus being divided, the whole right lobe was removed. There was very little bleeding indeed, and only about half-a-dozen large vessels required ligature. The wound healed as usual. The patient was discharged a fortnight after the operation, and stated that he was already very much better; the murmurs previously noted were also less perceptible. When seen about two months later he still had some exophthalmos, but he stated that he had had no palpitation, and he was particularly pleased that he could now play cards without any trouble, a thing he had previously been quite unable to do. The other case was that of a woman æt. 37, with extremely marked exophthalmos and other symptoms. The prominence of the eyes had begun about three years previously, and she had been constantly under treatment without any benefit. The right lobe of the thyroid gland was somewhat larger than the left, and consequently it was removed in the same way as in the former case, and with the same ease. The wounds healed by first intention. She has shown herself from time to time during the last eight months, and although her exophthalmos seems very much the same as before, and although she still has tremor of the lips and so forth, she asserts that she is a great deal better, and that she is not troubled with palpitation as was formerly the case, and that she is now able to resume light work as a dressmaker, which for two years she had been quite unable to do.

There were only two cases of *fractured patella.* The first was that of a sailor who broke his patella nine weeks before admission, and who was quite unable to walk, the fragments being separated by about three quarters of an inch. The patella was wired in the usual manner, the incision being a flap somewhat resembling the incision for excision of the knee. The wound healed by first intention, and the patient left the hospital to resume his duties as captain of a vessel three weeks after the operation. He was then able to walk easily with the help of a stick, had considerable movement in the knee, which was constantly increasing. The other was a case of a patient who was admitted immediately after the injury. The joint was very much swollen, and on the day of admission an acute eczema commenced over the front of the thigh, which extended over the whole leg. On the third day after admission the patient suffered from an attack of delirium tremens, hence the operation had to be delayed until a month after the accident, and considerable separation of the fragments had in the meantime taken place. The usual operation was performed with the same incision as in the last case, the splint was removed at the end of a week, and the patient allowed to move in bed. He was allowed to get up on the twentieth day, and when he left the hospital, three weeks later, his knee was as good as the other one.

In the treatment of these cases I think it is of great importance that as soon as the wound has healed the patient should be allowed to move the knee in bed, and this can generally be done at the end of a week. The result has been, in all the cases in which I have adopted this plan, that when the patient left at the end of about six weeks, which is the usual time that I keep them under observation at the hospital, the movements of the joints have been absolutely free, although no passive motion has been employed. I always let the patient get up and begin to walk about the ward about a week after the splint has been removed. Of course, in such a case the strength of the knee depends for the time being on the silver wire, because, naturally, no bony union has occurred in such a short time; hence I use especially strong silver wire, and in heavy men, where there is likely to be much strain on it, I generally employ two sutures. Of course, the quickest results are obtained when the operation is performed immediately after the injury; but even in cases where it is delayed—as in the two mentioned—the results are quite satisfactory, though a somewhat longer time elapses before the movements are quite free. During the operation I keep up constant irrigation of the joint with 1 to 4000 sublimate solution. Incisions into healthy joints are now almost the only cases in which I employ constant irrigation during the course of the operation, and I quite admit that it may not be absolutely necessary, but at the same time it seems to me to provide a great element of certainty as regards the aseptic result, and thus relieves one's mind of anxiety.

I may also mention a case of *empyema* in an adult as an example of the value of leaving out the tube at a very early period. He was a patient æt. 28, who had been ill for a month, and whose left pleural cavity was almost completely full of pus, and had apparently been so—as far as one could gather from the history—for about a fortnight. The chest was opened in the mid-axillary line and a portion of rib removed. Following Dr. Sutherland's advice given in papers in the *Lancet* recently published, the patient was then allowed to partially awake from the chloroform, when coughing commenced. This coughing was encouraged for about ten minutes, a sponge and dressing being held over the orifice so as to prevent the entrance of air through the wound during inspiration, and at the end of that time the lung, which in the first instance could not be felt anywhere, was found to bulge out into the wound and against the chest wall in all directions. A short drainage-tube was then inserted, a piece of protective being placed over it to act as a valve preventing the entrance of air, and the usual dressings were applied. The tube was left out on the third day, the discharge from the wound then being entirely serous and comparatively small in amount. There was no re-accumulation of fluid, the open wound healed rapidly, and the patient left the hospital well twenty-nine days after the operation. The lung had evidently expanded completely, and the wound was quite healed. This is the earliest period at which I have as yet left out the tube in the case of empyema in an adult, but at the Children's Hospital, Paddington Green, we have in several instances left out the tube at an even earlier period with quite satisfactory results. The length of time that the tube requires to be kept in depends in the main on the rapidity of expansion of the lung after the operation, and there is no doubt, I think, that this expansion is very much favoured by adopting the method mentioned, allowing the patient to partially awake from the chloroform, and encouraging coughing before the tube is inserted and the dressing applied.

Another very interesting case was that of a patient æt. 22, who was admitted with a swelling in the abdomen which presented the form of an elongated lump extending from the pubes to the umbilicus, rather to the right of the middle line, apparently mainly in the substance of the rectus muscle, but also extending pretty deeply, absolutely painless, slightly moveable from side to side, the skin being also freely moveable over it. He had some painless enlarged glands in the right groin. The history was that about eight weeks before admission, after a supper of sour plums, he was seized with severe griping pains in the abdomen and bad diarrhœa. A day or two later he had signs of irritability of the bladder, and about a week after the commencement he noticed this lump in the abdomen which was at that time very tender, but this tenderness had gradually subsided. It had been treated by various inunctions, mercurial and otherwise, but without producing any effect. I came to the conclusion after examination that it must be a sarcoma in the wall of the abdomen, especially in connection with the rectus muscle.

Accordingly I made an incision in the middle line with the view of ascertaining whether the mass might be removeable. The tumour was found to be essentially in the belly of the rectus, and was white in appearance and in all respects resembling a sarcoma. The peritoneum was attached to the tumour, and in the omentum a large mass of glands was felt. The tumour was cut into and presented a white appearance with no evidence of caseation, and owing to the extent of the disease the wound was closed, no further attempt being made to remove the mass. To my surprise, from the time of the operation the lump rapidly disappeared, and when the patient left the hospital twenty-three days later (the wound having healed by first intention) the lump had absolutely gone. It is clear, therefore, that it must have been an inflammatory mass, but unfortunately it was not examined microscopically, and its exact nature remains uncertain.

Another very remarkable case was brought to me by Dr. Dalton. It was that of a man aged thirty-nine, born in the West Indies, who had about fifteen years previously suffered from a discharge first from the left ear, and subsequently from the right. About six months before admission he noticed a dull pain behind his right ear, which increased in the course of two or three days to such an extent that he was induced to examine the part, when he felt a small swelling which pulsated about an inch and a half behind the pinna. The patient had not felt well for some weeks previously to the commencement of this pain, and very shortly after he discovered the swelling he became seriously ill with fever accompanied by delirium. On recovering from this attack this pulsating swelling was still apparent, and during the attack he had spasmodic twitchings of his left arm. He had also since that time been troubled with a continuous loud noise in the head, and he had never recovered his strength. The patient was a thin, sallow man, evidently in a very weakly state of health, with a small, soft pulse of 120, a systolic murmur loudest at the base, and pterygium on the left eye. His spleen was enlarged. There was a swelling of about an inch in length over the base of the mastoid process on the right side which could be seen to pulsate, but the pulsations were not very strong. This swelling extended to within about an inch of the pinna and backwards towards the suboccipital fossa. It did not reach as low as the tip of the mastoid process, the main mass of the swelling, in fact, corresponding to the position of the lateral sinus. Pressure on the swelling caused the patient to feel sick and faint, and a very distinct thrill was felt just at the anterior part of the swelling. On stethoscopic examination a continuous bruit could be heard, most loudly at the point at which the thrill was best felt; pressure over the carotid vessels stopped the pulsation and the bruit, and also stopped the noise in the head, but at once produced a feeling of sickness and faintness, and on one or two occasions he stated that it caused some twitchings in his left side. There was no distinct motor difference between the two sides except as regards the tongue and the face; the tongue protruded, going somewhat to the left, and the left side of the face was somewhat smoother than the other. On May 15th the patient was anæsthetised, and the right common carotid artery was tied. It was intended to tie the internal carotid artery, but that was found to be dilated and diseased at its commencement, and hence ligature of the common carotid artery was employed. Immediately after the ligature the pulsation and the thrill were not apparent, but the bruit could still be heard. The wound healed by first intention, and the patient left the hospital on June 13th, having in the interval been operated on in the aural department for the trouble in the left ear. When he left the hospital, there was still pulsation in the swelling, and the thrill could still be felt, though these two signs were thought to be less marked than previously, and he complained of the noise in his head and the pain, though the pain was, he stated, somewhat less than before the operation. As a matter of fact, the operation did not materially improve the patient's condition. I may add that the patient was readmitted in October, and although the history does not come within this year's report I may mention very briefly what then occurred.

On his readmission his condition was as before, and he was still anxious to have something done with the view of improving his trouble. It was still found that pressure over the carotid sheath arrested the symptoms, and produced the same peculiar faintness and sickness as before. As the carotid artery had been tied, it was clear that the result must be due to blocking of the jugular vein, and as the diagnosis at which I had previously arrived was an arteriovenous aneurism, the vein affected being the lateral sinus—the artery, however, being unknown—the arrest of the symptoms on pressure over the jugular vein seemed to be quite compatible with the previous diagnosis. Accordingly I again admitted him into the hospital, and cut down behind the upper part of the sterno-mastoid with the view of either tying the vein or proceeding to examine the pulsating swelling, according as seemed desirable. The latter was the course which I adopted. I proceeded to isolate the sac, and found it to be thin-walled with several veins entering it. When these veins were divided, venous and not mixed blood appeared. At one place I thought the blood was mixed, but on reflection I believe that I must simply have severed a small artery in the neighbourhood. Having completely isolated the front and sides of the swelling I found it was firmly adherent to the mastoid process in the situation previously mentioned, and on pressing the swelling one could feel a groove in the bone. I very rapidly detached the mass from the bone, this being followed by a violent gush of venous blood, and on removing the sac I found that there were two openings in the mastoid process, one elongated and about nearly an inch in length, and perhaps a quarter of an inch in breadth, and one quite small further forward, corresponding to the point where the thrill had been felt. It was quite evident that the diagnosis had been correct in so far that the swelling was a dilatation in connection with the lateral sinus which had eroded the bone. The openings in the skull were plugged with gauze; no further bleeding took place, and the patient recovered. On the day following the operation, however, he had hemiplegia on the left side, more especially of the left arm; the left side of the face was also slightly affected. There was complete wrist-drop, and the left leg was also incompletely paralysed. This condition gradually passed off in the course of a few days, and when he left the hospital, though the left arm was still somewhat weak, none of the movements were deficient. He still complained of some noise in his head, but on analysing it more closely it seemed to be more in connection with the trouble in the left ear. It is very difficult to form an opinion as to the nature of this disease. There is no doubt that the main dilatation was in connection with the lateral sinus. Why it should have dilated and eroded the bone is not easily explained. My present belief is that it was from the first solely a dilatation of the lateral sinus, and not an arterio-venous aneurism; and I think that the feeble pulsations of the sac were simply the communicated pulsations of the brain, and that the thrill was due to the venous blood pouring out from the small hole in the bone in front. There must naturally have been something further wrong to explain the effects of pressure on the carotid sheath, and I think there must have been a dilatation of the vein somewhere in front projecting forward into the middle fossa, and that the symptoms on compressing the jugular vein were due to the distension of this prolongation with blood. I would also explain the temporary paralysis after the operation by distension of this supposed prolongation with clot. The patient has now gone back to the West Indies, so that the final solution of the mystery is improbable.

There were a number of other cases which occurred during the year which would be well worth mentioning, such as a case of recurrent hydronephrosis in a floating kidney cured by fixing the kidney in its proper position. Also a case of tubercular tumour in the pelvis of a girl, discharging into the rectum, and also above the pubes, and probably originating in the broad ligament. This patient had been under treatment by an ovariotomist and a gynæcologist, who had decided to abandon her to her fate. I opened the abdomen and removed the tumour without much difficulty, leaving a free communication between the rectum and the healthy peritoneal cavity. Drainage-tubes were inserted down to the opening into the rectum, and the patient completely recovered. Space, however, fails me for further notes on these and other cases, and some of them will be reported elsewhere.

CASES OF INTEREST

UNDER THE CARE OF MR. ALBERT CARLESS.

OPERATIONS UPON THE KNEE-JOINT.

In the days which preceded the introduction of antiseptic surgery no operative measures directed to the knee-joint (except excision) were ever undertaken without great fear of the results which might follow, and thus many forms of subcutaneous operations were devised for dealing with loose cartilages and such like conditions. Strict asepsis renders opening of the knee-joint a proceeding free from danger, and hence it is much more frequently adopted than formerly, although still it is a measure fraught with risk in the hands of those who cannot maintain the wounds they have made in an aseptic state. It is well, then, to note successful cases, and the reasons for which they have been undertaken.

I have opened the knee-joint at hospital four times during the past twelve months, once for chronic synovitis, twice for conditions connected with the semilunar cartilages, and once in order to suture a fractured patella, and in none of these cases has any serious after-consequence arisen ; one suffered from a little synovitis, but it was of slight importance, and all have regained perfect mobility and usefulness of the limb.

In order to gain good results the following details in the operative technique must be attended to. (I exclude the treatment of fractured patella, which is dealt with elsewhere in this volume by Mr. Rose.) The skin of the knee should be shaved, and carefully purified by some approved method, whilst the hands of the surgeon and instruments must also be rendered aseptic. It must, however, be remembered that a synovial membrane is a very irritable tissue, readily becoming inflamed on any slight provocation, and hence all strong antiseptics must be carefully excluded from it. The instruments, after being purified in carbolic lotion (1 in 20), should be placed in a weaker solution; a 1 in 40 or 1 in 60 will suffice. The incision made should be a vertical one about three quarters of an inch from either the inner or outer border of the patella, as may be most convenient; when the joint is opened to drain a chronic synovitis this may best be accomplished on the outer side, but if for a displaced semilunar cartilage, on the side of the injury. It should extend for about two inches, part being above and part below the upper surface of the tibia. The capsule is cut down on and incised to a similar extent, and the synovial membrane freely opened. The finger is then inserted, and the joint fully explored. No lotion is allowed to enter the articulation unless it is essential, and then only a weak sublimate solution (*e. g.* 1 in 4000), as being less irritating than carbolic. Having dealt with the abnormal condition as circumstances dictate, the joint should be gently wiped out with a small soft sponge, and the cavity closed, unless it is considered necessary to drain it, as in the treatment of chronic synovitis. The synovial membrane should be carefully sutured with fine catgut, as also the capsule, and then the skin is brought together with a continuous suture, and the wound dressed, firm elastic pressure being employed and especially over the supra-patellar pouch, so as to prevent any accumulation of fluid therein. As a rule there is no need to dress it for eight or ten days, when the stitches may be removed, and the wound is found healed. Passive movement must not be commenced until two weeks have elapsed, and the joint must subsequently be protected by an elastic knee-cap for some time.

The four cases mentioned are as follows.

Case 1.—Henry L—, æt. 16 years, a cabinet-maker by occupation, was treated as an out-patient for four months, suffering from chronic synovitis of the left knee following an injury. The limb was kept on a back splint, painted with iodine and blistered, but without much benefit. After a few days' rest in hospital the swelling diminished to some extent, but as the synovial membrane continued thickened, and the patient had several times relapsed after temporary improvements, the joint was opened on February 12th by an incision on the outer side, and exit given to a considerable quantity of viscid synovial fluid. The joint was washed out with a 1 in 4000 solution of corrosive sublimate, and a drainage-tube inserted, the synovial membrane being closed above and below it. The tube was retained for four days, but as it caused a certain amount of pain and the patient's temperature was slightly raised, it was then removed. The pain at once ceased and the temperature became normal; the stitches were removed on the eighth day, and the wound was then practically healed. The patient was discharged on March 15th, with the joint closed and in a normal condition; no recurrence of the synovitis has been noted.

The treatment of chronic synovitis by incision, after rest and counter-irritation have failed in curing the case, is a most valuable proceeding, and the result of my observation and experience is to lead me to the belief that in competent hands it is both safe and efficacious. The relief of tension experienced by the removal of the effused fluids, the change of pressure caused by the admission of air to the joint, and even possibly the local abstraction of blood from the wound, all combine in bringing about a change in structure, habit, and function in the synovial membrane which rapidly results in a *restitutio ad integrum.* I look on this effect as very similar in character to the cures produced in tubercular peritonitis by laparotomy.

Case 2.—Annie B—, æt. 22 years, admitted on May 5th, a healthy young woman suffering from a loose semilunar cartilage. In August, 1892, whilst jumping over a stile, she fell and injured her right knee, which became swollen and remained so for a few days; but she thinks this was only a bruise. In August, 1893, she slipped on a door-step, "ricking" the same knee; for a short time she was unable to bend it, but by a little manipulation something seemed to slip back into place, and this was followed by the joint becoming moveable again, but very soon also by a painful swelling, which under treatment subsided. Since then, she states, the joint has been continually "ricked," even three or four times a week, and latterly this has not induced any increase of the swelling. On examination in the out-patient room a painful swelling was found over the inner edge of the upper surface of the tibia, and on flexion of the joint there seemed a slight prominence of the internal semilunar cartilage. The limb was immobilised in plaster of Paris for two months, in order to give the loose cartilage a chance of uniting, a practice I always follow, though without much hope of benefit, except when applied immediately after the accident; in chronic cases of displacement I simply look upon it as a last chance, prior to opening the joint, which I think the patient should be given. As I expected, no good resulted, and so on May 7th I opened the joint on the inner side, and on flexing the knee found that the internal semilunar cartilage slipped forwards out of place and was very loose. As it seemed likely that satisfactory fixation would not be obtained by suturing it to the periosteum of the tibia, I excised the anterior half of the cartilage, and closed the joint. The wound was well in a week and the girl left the hospital in ten days, owing to the pressure of patients waiting for beds, the precaution being taken to immobilise the joint in a water-glass splint for a few weeks. When this was removed the knee was placed in an elastic knee-cap, and rapidly became firm and strong, no recurrence of the painful symptoms being noticed.

This is a typical case of untreated displacement of the internal semilunar cartilage. The immediate symptom induced by the accident is a painful locking of the joint, which can usually be freed by a little manipulation, especially if the limb is firmly flexed and then extended, the cartilage often returning to its place with a definite snap. A subacute attack of synovitis always follows, and when this has subsided the limb should be put up in plaster for two months. When this practice is not followed the cartilage only gains a loose attachment to the head of the tibia, and on the slightest provocation slips once more out of place. This occurs again and again, the joint becoming painful and swollen. In such cases operation holds out the only hope of cure. When the cartilage is found in a normal condition, but only loose, it may usually be successfully fixed again by freeing it above and below along the line of the wound, and then stitching it to the periosteum over the head of the tibia. If it is doubled over or so displaced as to render its fixation impossible, it should be removed, and it is a strange fact to note how comfortably a patient can get on without it.

Case 3.—Percy R—, æt. 19 years, a clerk, had sustained an injury to his knee-joint four years previously, stated to be a dislocation of the patella. Subsequently he frequently noticed that it seemed to slip out of place, and sometimes to become stiff, the knee also becoming swollen. On examination I found no evidence of displacement of the patella, but on the inner aspect of the joint I could feel and move about a small rounded body, which the patient stated was the source of his pain. He was admitted June 23rd, and operated on two days later. The joint was opened on the inner side, and a small piece of cartilage about the size of one's thumb-nail was found adherent to the synovial membrane by its flat surface, and having no connection with the semilunar cartilage, which, as far as I could see, appeared normal; but the whole of it could not be examined. I excised the piece of cartilage and closed the rent in the synovial membrane by fine catgut sutures. The wound healed satisfactorily, but a certain amount of synovial effusion followed. An ounce of this was removed by the aspirator, but the condition was very slow in disappearing, which was probably due to the fact that the patient was by no means a healthy lad, as evidenced by the presence of adenoids, large masses of which I had previously removed. The final result was, however, satisfactory.

In this case probably a small portion of the cartilage had been totally detached, and had subsequently contracted adhesions to the synovial membrane, and thus become fixed. If this were so, the accident was certainly of a most unusual nature.

Case 4 was a fractured patella in a healthy adult man living in the country, the bone being broken whilst the patient was stooping to pick up a ball in a cricket match. The patient was seen by Mr. F. Heather, and sent by him to me at the hospital, the operation taking place on the fourteenth day after the accident. The lower fragment was small, and its upper surface convex, dovetailing into the lower concave border of the upper portion. Fibres of the aponeurotic capsule investing the anterior aspect of the bone were plastered down over the upper bony surface, and had to be removed, whilst the anterior rotary displacement of both fragments was most marked. One silver suture was used to obtain approximation of the fragments; the joint was sponged clean of all blood-clot, but not washed out, and the whole wound closed without drainage. The stitches were removed on the eighth day, and the integumental wound found healed. A Gooch splint was applied for a fortnight, but gentle passive movement was commenced on the eighth day, and the splint entirely removed on the fifteenth, the patient being allowed to walk about on the twenty-first day. An uninterrupted recovery followed, and when the patient came to show himself a month afterwards the injured limb was as moveable and strong as the other.

Two other cases of considerable interest have been in hospital under my care during the past year.

The first of these was one of ruptured vas deferens. The patient, a man æt. 47, sustained a severe injury to his scrotum three years previously whilst lifting a heavy piano. The testicle subsequently became swollen and painful, and a little later on attempting connection with his wife he found that some hæmorrhage had taken place from the urethra. On a repetition of the act a little later the testis became exceedingly painful and swollen. He attended me for a time as an out-patient, and remained fairly comfortable as long as sexual intercourse was abstained from. Early this year I saw him again, and finding the size of the organ increasing, and that it was becoming troublesome, I recommended that castration should be undertaken. This the patient agreed to, and it was satisfactorily performed a little later.

This case is almost unique, only one other similar instance of rupture of the vas in the scrotum being on record. Mr. Birkett reported three cases of intra-pelvic rupture with somewhat similar symptoms, but there is no record of the subsequent condition of the testis. In my case the organ was normal in size and consistency, but on microscopic examination proved to be degenerated, and at one spot softened and almost purulent. The case is more fully reported in the *Lancet* of September 22nd.

The second case was one of congenital cleft of both upper eyelids. It occurred in a woman from whom I removed the alveolar process of the upper jaw for a sarcomatous growth. It had been partially cured at Moorfields Ophthalmic Hospital by operative measures, but the defect was still very evident, and the cleft between the two halves of the tarsal cartilages could be distinctly appreciated. A similar case was reported by Mr. Cowell a short time back to the Ophthalmological Society, but the condition is one of extreme rarity. Its existence is explained by the fact that each lid is developed from two segments which, growing in from either side, unite in the middle line. The effect on the patient's facial expression is most curious, giving her a startled, half-scared aspect.

CASES OF INTEREST

UNDER THE CARE OF MR. BEALE.

Excision of Rectum.

It is generally stated that it is better not to attempt to bring down the bowel by means of sutures to the skin after this operation, for the stitches soon give way, and also there is apt to be "bagging" of discharge in the ischio-rectal fossa.

In a case recently under my care the bowel was secured as follows. The case was that of a man aged about thirty-three, who had undergone very many operations in other hospitals for fistula. When he presented himself here both sphincters had been so repeatedly and extensively divided that he had complete incontinence of fæces and a large prolapse. An oval skin incision was made round the anus about a quarter of an inch from the edge of the bowel. The latter was then freely separated up for a distance of 2½ inches by the use of the fingers only. There is no difficulty in this where no new growth is present, and by so doing all trouble from bleeding is averted. The lower 2½ inches of bowel were then snipped off with scissors and a few vessels tied.

A large needle armed with a strong silk suture was then passed through the skin at the lower and left aspect of the wound, and about one inch external to the cut edge of the skin the needle was passed through the walls of the bowel about half an inch above the point where it had been cut off, and then withdrawn from the lumen of the bowel; it was then passed through the bowel and skin in the reverse direction, so as to emerge at the left upper aspect of the wound and one inch from the cut edge of the skin. The ends of this suture were then tied, so that the one suture embraced nearly the whole of the left half of the bowel and about two inches of the skin on the left of the wound. A similar suture was then passed on the right side and tied. Thus the bowel was pulled downwards nearly to the edge of the wound, and seeing how far from the edge of the skin the suture was tied, the traction was such as to press the bowel on each side against the tissues from which the excised portion had been separated. These sutures were left for three or four weeks practically until they had nearly cut their way through the skin, and by that time the walls of the bowel were firmly adherent. By this method no space is left for any discharge to accumulate in, and the process of healing is much accelerated. I have adopted it in a previous case, and with an equally good result.

Now I have for some time thought that the tissue-fibres of the gluteus maximus might be used to form a new external sphincter after such an operation. The circular muscular coat of the rectum does not take on its sphincter action thoroughly for some months after excision of the lower part of the rectum, and, indeed, in some cases it appears never to do so. The external sphincter is of some service in retaining fæces, in that by its attachments it keeps the orifice of the bowel a little compressed from side to side, but it is just in those operation cases in which the internal sphincter is removed that the external must necessarily also suffer very much. Why should not the inner fibres of the gluteus maximus be separated off anteriorly, and the ends brought together around the lower end of the bowel after excision? It would involve a second operation, but might, I think, prove of considerable value in checking incontinence of fæces. I have done this in a case where one half of the lower end of the rectum and the sphincters had been removed freely for disease, and there it appeared to be of great use. It is only in those cases where often repeated, or extensive previous operations have been done about the anus, that this procedure might be of value.

EXCISION OF ULCER ON DORSUM OF HAND—IMMEDIATE SKIN GRAFTING.

It is often said that it is necessary for a wound to granulate freely before skin grafting by Thiersch's method can be adopted. Even then, in order to prevent cicatricial contraction, the granulations must be freely removed. Reference to cases under Professor Cheyne, in which he has removed the breast, and part or the whole of the pectoralis major, and then grafted at once, will show that it is possible to graft successfully immediately after operation. The following case illustrates this also.

A man æt. about 60 was admitted with a circular ulcer about two and a half inches in diameter on the back of the hand. It had been increasing in size slowly for the last nine months, and had now spread on to the back and sides of one finger. There was considerable difference of opinion as to its nature; some believed it to be malignant, but I inclined to consider it as a tertiary syphilitic ulcer. It improved under local and general antisyphilitic treatment, but very slowly, no doubt partly owing to the fact that the patient, although only about sixty, appeared considerably older as far as general vigour went. So, as it was likely that the ulcer would take some weeks to heal completely, and as the patient was anxious to have it removed, I excised it with about a quarter of an inch of healthy skin all round. Hæmorrhage was nearly stopped with sponge pressure, and grafts of purified skin from the arm were applied over the whole of the raw surface (the ulcer had been purified by previous repeated scrubbing, and the application of 1 to 20 carbolic fomentations). It was difficult to apply the thin grafts on the sides of the finger, so that small pieces of these did not "take," but the whole of the rest of the wound was covered with sound skin in ten days after the operation. I think it is advisable not to check the bleeding absolutely before applying the grafts, providing that the dressing upon them is applied with a little pressure, as the small clots which form round the grafts help to hold them firmly in position.

EXTENSIVE DIAPHYSIAL TUBERCULOUS DISEASE IN AN INFANT AGED SIX MONTHS.

In this case the whole of the shaft of one metacarpal bone and the upper ends of the shafts of the radius and ulna on the same side were the seats of very extensive tuberculosis. On thorough scraping it was found, as is so often the case, that the epiphyses were not at all affected, so that in the case of the metacarpal the single lower epiphysis and the periosteum only were left after the operation. The wounds were kept stuffed with iodoformed cyanide gauze, and the result was good, there being hardly any shortening. It is remarkable how well and quickly these cases heal when one considers the very extensive removal at the time of operation.

NOTES

OF

FATAL CASES OCCURRING IN THE SURGICAL WARDS DURING THE YEAR.

(Mr. Cheyne's Cases excepted, *vide p.* 207.)

By L. V. CARGILL, F.R.C.S.,
SURGICAL REGISTRAR.

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1. *Burn* (under the care of Mr. Rose).—R. C—, female æt. 20, admitted August 14th, 1894, with extensive superficial burns of trunk and upper and lower limbs, resulting from the upsetting of an oil lamp. Died on August 17th. On post-mortem, congestion of various internal organs, nothing else noteworthy.

2. *Burn* (under the care of Mr. Rose).—M. R—, female, æt. 4, admitted August 30th, 1894, with extensive burns of the second degree, involving the head, face, trunk, and extremities, the child's clothes having caught fire. Died two hours after admission.

3. *Traumatic hæmatoma in left loin; delirium tremens; death* (under the care of Mr. Rose).—W. F—, male æt. 39, admitted on July 4th, 1894, with a hæmatoma in the left

lumbar region. It dated from a fall backwards off an omnibus about a fortnight before. He was a fat man and a hard drinker. Urine normal; various organs healthy. By aspirator about 16 oz. of clear blood were withdrawn. The following day symptoms of delirium tremens set in, but he became quieter on the administration of bromides and chloral, and took food well. His pulse was feeble, however, and the next night he became much worse, and died comatose on July 7th, 1894.

4. *Cut throat and penetrating thoracic wounds; tracheotomy; death seven hours after admission* (under the care of Mr. Rose).—A. H—, male æt. 55, admitted on July 3rd, 1894, with a deep wound, some three inches long, in the thyro-hyoid space, completely severing the thyro-hyoid membrane and the base of the epiglottis; no large vessels were cut. Two penetrating wounds were also found in the fourth left intercostal space, through which air entered the chest on deep inspiration, and there were signs of pneumothorax. Tracheotomy was performed, salt solution was transfused, but patient sank in seven hours. On post-mortem examination, in addition to the injuries mentioned there was a wound of the pericardium; there had been no intra-thoracic hæmorrhage, but pneumothorax was present.

5. *Fibrous stricture of pylorus resulting from ulceration; exploratory laparotomy and formation of a fistula* (under the care of Mr. Rose).—S. S—, female æt. 29, under Dr. Yeo, and transferred to Mr. Rose, June 1st, 1894, was a case of pyloric obstruction. An exploratory laparotomy was performed, and a mass found at the pyloric end of the stomach, at first thought to be malignant, but subsequently found to be the remains of adhesions, which had probably resulted from a gastric ulcer about four or five years previously. The stomach itself was not very large, but oblong in shape. The pylorus was closely adherent to the gall-bladder and liver, and Mr. Rose tried first to separate these adhesions, but in doing so an opening was made at the pylorus through the base of an old chronic ulcer. The patient being in a very bad condition and very emaciated, it was thought advis-

able not to do gastro-duodenostomy, but to stitch the margin of the opening at the pylorus to the abdominal wall. The patient stood the operation very well. For four or five days she had to be kept well under morphia on account of the pain which she experienced. A large quantity of gastric juice and bile came through the opening, and at first a little auto-digestion took place around the margins of the wound; but under careful, constant dressing, it healed. No peritonitis occurred. She was fed continuously by means of nutrient enemata, but she gradually sank, and died on June 14th, fourteen days after the operation.

Post-mortem.—There was marked general emaciation. Thoracic organs were normal. Stomach was not dilated; its wall was thickened and along the lesser curvature were two scars in the mucous membrane. The pylorus was surrounded by peritoneal adhesions, in which the gall-bladder was involved. The pyloric orifice was extremely narrow, and very hard and unyielding from the presence of scar tissue. At the posterior and upper part there appeared to be a chronic ulcer, but the opening made at the operation was just at this point. No recent peritonitis. No evidence of new growth. Liver and spleen normal. Kidneys presented slight interstitial nephritis.

6. *Intestinal obstruction caused by an impacted gall-stone* (under the care of Messrs. Rose and Carless).—E. W—, female æt. 62, admitted under Mr. Rose on May 12th, 1894. She was a stout, rather bloated-looking woman, with a somewhat anxious expression, and gave the following history:—She was more or less subject to "bilious attacks," associated with vomiting and pain in the stomach. She had been taken ill six days previously with what appeared to be one of these attacks, but instead of getting better in two or three days she got worse. She had more pain in the abdomen, referred to the umbilicus, and down the right side to the right iliac region; and the vomiting was more or less continuous, and the smell the morning of admission she stated was fæcal. Her bowels had not been open for four days. About six years before she had experienced an attack of jaundice, preceded by intense pain, which passed off suddenly.

No history of passing gall-stones. For many years she had suffered from a slight umbilical hernia. Family history was unimportant. On admission her tongue was clean, and her pulse about 90 and of good tension. At the umbilicus there was a tumour about the size of an orange; not tense or tender, quite irreducible, without impulse, and feeling as though the contents were omentum. Mr. Rose decided not to operate at once, as the tumour was not a strangulated hernia. Enemata were given, with a fair result after the second. She was fed by the rectum, and the temperature was just above normal all the next day, and she had no vomiting or retching. On the afternoon of the second day after admission she had slight retching, in which some gastric secretion regurgitated; but in the evening the odour was unmistakably feculent, and her aspect was much worse, and her pulse intermitting and of poor tension. During the same night Mr. Carless operated under chloroform. The umbilical tumour was explored and found to be all omentum, which was virtually non-vascular, fibrous, and adherent. The opening was then enlarged, and the abdominal contents explored. The small intestine was found very swollen and tense, and was followed down until just at the ileo-cæcal valve a hard mass, some one and a half inches long by three quarters of an inch in diameter, was felt in the lumen of the gut, its lower end pressing against the valve and completely closing it. A long incision was made at the free margin of the bowel, the mass removed, and the opening closed with Lembert's satures. The mass removed consisted of a gall-stone embedded in hardened fæcal matter. The operation occupied altogether two hours, and the patient seemed fairly well just after it. The next evening flatus and a formed motion were passed, but the pulse gradually failed, and though brandy and champagne were given by the mouth, and ether and strychnine hypodermically, she died early the next morning, about twenty-six hours after the operation (May 16th, 1894).

Post-mortem.—There was moderate peritonitis (no pus), localised fairly well to the region where the gall-stone was found. The incision itself was closed, and allowed nothing to pass through. There was a fistulous opening between the gall-bladder and duodenum, which admitted the index finger. There were old adhesions at the base of the right pleura. The lungs were normal. There were white patches on the pericardium. The heart, spleen, liver, and kidneys were normal.

7. *Advanced tubercular hip disease; amputation; death from shock* (under the care of Mr. Rose).—C. J—, male æt. 20, was admitted April 14th, 1894, with old-standing right tubercular hip disease. He was pale, anæmic, and wasted, and had lardaceous disease of liver, spleen, and kidneys; extensive disease about the hip and general suppurating sinuses. Amputation at the hip-joint was performed under ether. The disease was found to involve the pelvic bones. The patient was much collapsed, and died about three hours after the operation in spite of digitalin, strychnine, and saline rectal injections.

8. *Vesical calculus; removal by supra-pubic lithotomy; death from pyonephrosis and hepatic abscess in three days* (under the care of Mr. Rose).—H. M—, male æt. 16, was admitted on April 4th, 1894, suffering from a stone in the bladder. He was in a very bad condition, and in consequence operative interference was deferred; but as his state was getting worse Mr. Rose operated on April 9th in the following manner:—The bladder having been first washed out and distended with boracic solution, a semicircular flap, its convexity reaching down to the crest of the pubes, was turned up and secured to the abdomen by a stitch. The deeper structures were then carefully separated, and the bladder exposed below the peritoneum. A stitch was passed through the bladder wall, the organ pulled forward, and a vertical incision made in it. An endeavour was made to remove the stone with forceps and scoop, but it crumbled away, and could not be extracted through the opening made; so the aperture was enlarged downwards and laterally, when a large stone, covered with phosphatic incrustations, and weighing 1 oz. 40 grs., was successfully removed. The bladder was well washed out, the wall sutured, and a gum-elastic catheter tied in the urethra. The patient died on the third day (April 12th) with suppression of urine.

On post-mortem examination pyelitis and abscesses in liver and kidneys were found (see Pathological Report, p. 319).

9. *Strangulated hernia; gangrene of bowel* (under the care of Mr. Rose).—J. S—, male æt. 51, admitted on December 14th, 1893, twenty-three hours after the first symptoms. He had not vomited since, nor had he passed a motion or flatus. He walked up to the hospital shortly before his admission, and said that, except for slight pain in the abdomen, he felt perfectly well. There was an irreducible tense swelling in the right inguino-scrotal region, which gave no impulse on coughing, and was not tender. The testicle could not be felt, and the swelling somewhat resembled a hæmatocele. He walked with a slight limp, but without any great pain; there was absolutely no sign of collapse about him, and he asked to be allowed to walk upstairs to the ward. He was operated on about an hour after his admission. The sac was found to contain a large quantity of dark, badly smelling serous fluid, and also a large piece of intestine, which was black and greenish in parts. There was also a large piece of omentum, which was ligatured and cut away. The stricture was divided with a blunt-pointed bistoury, and the wound was left open with the gut and the stump of omentum exposed. The wound was dressed with cyanide gauze and iodoform, and the dressing directed to be changed every six hours. The next day the patient was quite comfortable and complained of nothing, saying he felt perfectly well. The wound was dressed every few hours. He continued to do well for about five days, when he began to hiccough and vomit; and as he was getting worse on the morning of December 21st, Mr. Rose cut away all the gangrenous tissue under an anæsthetic, and removed the right testicle. He brought down the gut and sutured it to the edge of the wound with catgut sutures. A long enema-tube was passed and the upper portion of gut well washed out, removing much fæcal matter, some slightly formed and bile-stained. The patient was very collapsed after the operation, and brandy was administered *per rectum*, and strychnine and ether injected hypodermically. His pulse remained very bad, and vomiting and hiccough con-

tinued, whilst his temperature kept subnormal. His condition became worse, and he died the next day (December 22nd, 1893).

Post mortem there was recent peritonitis around the wound, but no general peritonitis. The wound had been shut off from the general peritoneal cavity by recent adhesions.

10. *Neuralgia of the fifth nerve caused by a tumour; death from asthenia and fatty heart; no operation performed* (under the care of Mr. Rose).—The tumour involved the superior maxilla, and extended upwards to the right side of the middle fossa, where it occupied the region of the Gasserian ganglion.

11. *Tic-douloureux; Hartley-Krause's operation; death from shock and exhaustion* (under the care of Mr. Rose). —A. S—, male æt. 67, admitted December 4th, 1893, with left-sided tic-douloureux. Had suffered for twelve years and undergone operative treatment elsewhere without benefit. Paroxysms of pain excessively severe; life unbearable.

On December 15th, 1894, under chloroform, Mr. Rose operated, reaching the Gasserian ganglion through the temporal region. A semicircular flap of skin, fascia, muscle, and bone was turned down from the left temporal fossa; the dura mater was stripped up from the middle fossa as far as the apex of the petrous portion of the temporal bone. The foramen spinosum was plugged with a piece of sponge to stop the bleeding from the middle meningeal. The second and third divisions of the fifth nerve were easily found, and the nerve-root pulled out behind the ganglion. As the dura mater had given way, and brain substance was protruding, no attempt was made to remove the ganglion itself.

The patient was severely collapsed after the operation, and he gradually sank and died five days later (December 20th).

Post mortem, the left temporo-sphenoidal convolutions were slightly ecchymosed. The dura mater had been stripped off the middle fossa, but not so far as the Gasserian ganglion. An incision had been made through the dura mater between the point where the fifth nerve pierces it and the ganglion. It had divided the nerve but not completely, some strands escaping intact. Lungs were congested and œdematous. Slight interstitial nephritis. Other organs normal.

12. *Malignant disease of rectum ; inguinal colotomy* (under the care of Mr. Barrow).—S. G—, female æt. 57, admitted on July 25th, 1894, with malignant disease of the rectum of considerable extent, with a history of several months' duration. On July 26th, 1894, left inguinal colotomy was performed. The next day about five feet of intestine was found protruding from the abdominal wound. All the stitches were removed, the bowel was purified and replaced, and fresh sutures introduced to keep it in place. On July 30th the colon was opened, all having gone well up to then. On August 3rd the patient died of exhaustion.

13. *Bullet wound in the head ; cerebral hæmorrhage* (under the care of Mr. Barrow).—A. C—, male æt. 50, was admitted July 25th, 1894. He was brought in quite comatose, with his head covered with blood, arising from a suicidal bullet wound in the region of the coronal suture. There was no corneal reflex, the pupils were inactive to light, the breathing was stertorous, and the pulse about 90 and compressible. Brain matter and blood-clot were projecting from the wound, and, on passing the finger into it, small pieces of lead and broken bone were withdrawn. Mr. Barrow explored the wound to find the bullet, but failed, and the man died, still in a comatose condition, one and three quarter hours after the injury. There was extensive fracture of the skull, and the bullet had passed through the lateral ventricles, left optic thalamus, &c.

14. *Extensive tubercular disease of the knee-joint ; excision ; death from shock* (under the care of Mr. Barrow).—E. M—, male æt. 8½ years, admitted on June 24th, 1894, with left tubercular arthritis. The disease dated from a fall on the ice two years previously. The knee on admission was semi-flexed and immoveable, greatly swollen, with distended veins,

very painful and tender, with marked local increase of temperature. On June 28th, 1894, excision was performed. Extensive disease both of bone and soft parts was found, and the patient died of shock one and a half hours after the operation.

15. *Scirrhus of breast ; shock after operation under ether* (under the care of Mr. Barrow).—S. J—, female æt. 47, admitted February 17th, 1894, with scirrhus of the left breast. Tumour size of orange noticed for six weeks. No enlarged glands felt. On February 23rd, 1894, ether was given by means of Ormsby's inhaler. Mr. Barrow then removed the breast, with healthy tissue around the tumour, and cleared out the axilla. There was no excessive hæmorrhage, but patient became very collapsed, and in spite of remedies (strychnine, salt solution in rectum, &c.) she died about seven hours after the operation.

16. *Malignant disease of rectum ; colotomy ; death three days later with secondary deposits in liver* (under the care of Mr. Barrow).—S. A. G—, female æt. 60, admitted June 27th, 1894, with malignant disease of the rectum. She was a pale, thin woman, looking very careworn. For the previous five weeks the rectal obstruction had become very marked (having been coming on for some months before), and she had taken to her bed and lost weight rapidly. *Per rectum* an extensive, hard, nodular, ulcerated growth could be felt, infiltrating the whole of the rectal wall, and the upper limits could not be reached.

On June 30th, 1894, left inguinal colotomy was performed satisfactorily. The patient did well up to 11.45 a.m. on July 3rd, when she suddenly became much worse, the pulse becoming scarcely perceptible, and the face anxious and covered with perspiration. Strychnine was given hypodermically, but she died at 1 p.m.

Post mortem the peri-rectal tissue was found infiltrated with hard growth, and a large ulcer with hard base nearly surrounded the rectum. The liver was fatty, and both lobes were quite full of large hard nodules. Other organs normal. No enlarged mesenteric or lumbar glands. No signs of perforation ; colotomy wound quite sound.

17. *Breaking-down gumma of chest wall; opened; death from asthenia* (under the care of Mr. Barrow).—E. L. T—, male æt. 59, admitted October 14th, 1893, in a very weak state, with a breaking-down, diffuse, gummatous infiltration of the left side of the chest, lower part of the neck and axilla, and extending a little way down the arm. It was opened, but the patient gradually sank from asthenia, and died October 21st, 1893.

Post mortem the cavity was found to extend over the greater part of the left pectoralis major, above the clavicle, and down the arm. It contained semi-caseous contents. The left pleura had not been perforated.

18. *Advanced hip disease; excision; death from shock* (under the care of Mr. Barrow).—J. W—, female æt. 36, was transferred from the medical wards to be under the care of Mr. Barrow, October 14th, 1893. There was advanced tubercular disease of the left hip-joint. Excision was performed, and the patient died of shock the same night (October 27, 1893).

19. *Fractured skull and lacerated brain; trephining; death* (under the care of Mr. Barrow).—T. G—, male æt. 63, admitted October 21st, 1893, in a comatose condition, with a hæmatoma on the left side of his cranium, the result of a fall. The hæmatoma was incised, and a linear fracture found. The skull was then trephined, and all blood-clot removed. He never recovered consciousness, and died the next day, his death being preceded by a temperature of 107° F.

Post mortem, laceration of the brain was found at the anterior end of the temporo-sphenoidal lobe, with hæmorrhage into the brain substance.

20. *Lacerated wound of knee-joint; shock* (under the care of Mr. Barrow).—C. R—, male æt. 56, was admitted October 4th, 1893, with a severe lacerated wound of the right knee-joint. He was an alcoholic man, and was suffering from hæmorrhage and shock. A tourniquet had been applied to control the bleeding. The part was purified, irrigated, and drained, but free suppuration ensued, and the patient died on October 8th, 1894.

21. *Vesical calculus* (under the care of Mr. Barrow).—G. G—, male æt. 66, was admitted under Mr. Barrow October 28th, 1893, with vesical calculus. Lithotrity was done, but the patient died from kidney mischief on November 15th. No post-mortem.

22. *Old-standing tubercular disease of kidney* (under the care of Mr. Burghard).—Annie M—, æt. 30, transferred from the medical wards July 17th, 1894, and nephrotomy done by Mr. Burghard. Patient almost moribund at time of operation. Death same day from shock and exhaustion.

23. *Malignant disease of left kidney; nephrotomy; shock* (under the care of Mr. Cheatle).—E. A—, male æt. 42, was admitted July 17th, 1894, with great enlargement of the left kidney and hæmaturia, which had been present two months. He had not felt well for four months, and had lost weight considerably. His mother had died of cancer. On July 21st, under chloroform, Mr. Cheatle operated. The kidney was difficult to remove on account of its size. The patient recovered consciousness, but died July 23rd.

24. *Torticollis; death under chloroform* (under the care of Mr. Cheatle).—R. H—, female æt. 10, was admitted April 4th, 1894, with torticollis, the result of infantile paralysis. The history was unimportant, and the condition on admission otherwise good. On April 14th, under chloroform, Mr. Cheatle divided the left sterno-mastoid subcutaneously. The administration had just been stopped, and the head and neck were being a little raised for bandaging on the dressing, when the patient ceased breathing, although the pulse could be felt. Artificial respiration was carried on until evidently hopeless, strychnine and ether were injected, and other means tried, but without avail.

25. *Tubercular cervical glands; syncope after operation* (under the care of Mr. Cheatle).—C. W—, female æt. 46, was admitted on January 6th, 1894, with tubercular glands in the neck. On January 4th Mr. Cheatle operated on the left side. The number of affected glands was large, and they extended deeply in various directions, passing down

even behind the clavicle. The operation lasted about two hours, and the patient was very collapsed after it. She was very sick, and had to be fed by nutrient enemata. She continued to vomit all the next day, and died on the morning of January 6th from cardiac failure. No post-mortem examination permitted.

26. *Chronic intestinal obstruction; laparotomy; death from asthenia* (under the care of Mr. Cheatle).—R. G—, male æt. 25, admitted December 29th, 1893, with chronic intestinal obstruction. Laparotomy was performed, and the mesenteric glands were found to be extensively affected with tubercular disease. The mesentery was much shortened, thereby binding the intestines to the front of the spine. No relief to the obstruction being possible, the abdomen was closed. The wound healed, but the patient died on January 9th of asthenia. No post-mortem examination permitted.

27. *Varicose veins; operation; death with septic pulmonary infarctions* (under the care of Mr. Beale).—T. T—, a milkman æt. 44, was admitted under Mr. Beale on September 18th, 1894, suffering from very large varicose veins in both legs, but especially worse in the right one. He looked quite sixty years of age; his hair was almost white, and his face very pale. Urine was normal, tongue clean, and bowels regular. His habits of life were regular. He had suffered from an attack of pneumonia some years previously. When first seen in August he had a varicose ulcer on the right leg, which was first treated with boracic poultices, and then with a firm bandage as it got better, but the ulcer was quite healed on admission. On September 20th, 1894, under chloroform, portions of the affected veins were dissected out. At 10 o'clock in the evening the patient was feeling well, and there had been no sickness. On the 21st at 6 p.m. his temperature was 100° F., and at 10 p.m. 99·4° F. On the 22nd at 2 a.m. it was 98° F., and at 8 p.m. he complained of a great deal of pain in the right leg, but there was no elevation of temperature. Mist. Alb. ℥iv given. On the 23rd he had passed a very bad night, and the lowest wound

on the right leg was re-dressed. It was looking red and inflamed at the edges, and the stitches were taken out and it was syringed. On the 24th he had passed a good night. At 6 p.m. the temperature was 100° F. On the 25th he had passed a very bad night and perspired freely; at 6 p.m. the temperature was 102·8° F. No. 1 diet, Mist. Alb. ℥iv, Quininæ Sulph. gr. v, and carbolic poultices for the two lower wounds on the right leg were ordered. At 10 p.m. temperature was 104° F.; 12 p.m., 105° F.; 1.30 a.m., 104·4° F.; 2.30 a.m., 103·4° F.; 5.30 a.m., 104·6° F.; 7 a.m., 104° F. Phenacetin and quinine were administered, and brandy ordered. He passed a bad night. On the 26th at 7.30 p.m. the temperature was 105·4° F. There was much swelling of the right leg, and a fairly defined red margin. On the 27th at 2 p.m. he was transferred to the medical wards. His breathing was then very rapid, and his pulse feeble. The wounds were being re-dressed every four hours. On the 28th at 4 a.m. he died suddenly, his temperature being just before about 104° F.

Post mortem there was abundant subcutaneous fat. The brain, pericardium, and heart were normal. The pulmonary artery and aorta were rather blood-stained, but there were no suppurating thrombi in any part of the heart or pulmonary artery. In the lungs there were abundant infarctions, from the size of a chestnut downwards. They were fairly recent because they nearly all showed the black currant jelly appearance of hæmorrhage. Most of them showed yellow areas, whilst a few exuded abundant dirty reddish pus. One was gangrenous in odour. There was recent pleurisy over the infarctions, and also old pleuritic adhesions. Kidneys normal; liver large and fatty; spleen large and soft. No thrombi found in any veins. Inguinal and femoral glands on right side large and firm, with red and white variegations on section. The operation wound on the front of the right leg was suppurating.

28. *Urethral stricture; surgical kidneys* (under the care of Mr. Beale).—C. M—, Covent Garden porter æt. 55, admitted August 9th, 1894, with urethral stricture and right reducible inguinal hernia. He was a free drinker, and had

been indulging especially freely the previous three weeks. Three years before he had been in the hospital under Mr. Cheyne for urethral stricture, and been operated on (external urethrotomy). He complained of pain during micturition, and sudden stoppage of the stream during the act, great frequency of micturition, and hæmaturia. The urine was alkaline, and contained albumen, blood, mucus, and phosphates. On August 11th Mr. Beale passed an instrument. The patient was discharged much better on August 20th, 1894, but readmitted on August 28th, and he died on September 20th, 1894, no operative interference having been attempted, the bladder being simply kept washed out.

Post mortem there was marked emaciation, old tubercle in lung, and pleuritic adhesions. The left ureter was dilated. The pelves of the kidneys were largely dilated, they contained a good deal of pus, and there were submucous hæmorrhages, especially on the left side. The kidneys were soft and broken down, with small abscesses in the cortex.

REPORT

OF

OBSTETRICAL DEPARTMENT,

January 1st to December 31st, 1893.

By JOHN PHILLIPS, M.D.

Note.—Full antiseptic precautions are carried out as far as is possible by the midwifery attendant, who visits the patient every day for the first five days of the puerperium, and takes leave of her on the tenth. The Assistant Resident Accoucheur sees every case confined in the maternity once at least, generally from the third to the fifth day. Should the midwifery attendant report a temperature over 100° F., the Assistant Accoucheur visits the patient daily until it becomes normal.

All cases of sepsis are thus noted, and placed in the annual obstetric report.

Total number of labours attended during the year, 621, with 1 maternal death = 0·161 per cent. (*vide* Case 4, p. 252).

Cases in which interference was necessary, or in which some abnormal course was observed during pregnancy, labour, and puerperium:

Cephalotripsy was performed for contracted pelvis in	1 case (p. 254).
Forceps applied (all for uterine inertia) in	4 cases.
Version (bipolar) for transverse presentation	1 case.
Marginal placenta prævia ; ante-partum hæmorrhage ; placenta delivered first ; child stillborn . . .	1 ,,
Prolapse of the cord . . .	1 ,,
Accidental hæmorrhage (ante-partum) .	1 ,,
Post-mortem hæmorrhage . .	1 ,,
Retained or adherent placenta, necessitating introduction of hand and peeling it from uterine surface . .	3 cases.
Adherent membranes . . .	1 case.
Perinæal laceration requiring suture (one in which forceps was applied) .	7 cases.
	21 cases.

Puerperal history :

Puerperal mania occurred in . .	3 cases.
(They were removed to infirmary.)	
Secondary post-partum hæmorrhage (severe) as the result of obstinate constipation in . . .	1 case.
Sepsis was observed in . .	7 cases.
(Or septic mortality = 1·127 per cent.)	

Case 1.—Acute septicæmia ; perimetritis ; suppuration in pelvis ; laparatomy eight weeks after labour ; recovery.

Case 2.—Acute septicæmia with sapræmia. On seventh day patient was admitted, with temp. 105·6° F., in violent delirium. No offensive odour from uterus, which was not involuted. Os uteri quite patulous. Intestines much inflated. No deposits in fornices, but a roundish mass in right iliac fossa, mobile and rather tender. She was douched with antiseptic solution several times, but the temperature remained high. On the thirteenth day chloroform was given and the uterus explored. Several pieces of non-offensive placenta were removed. On recovery from the anæsthetic the patient had a rigor lasting forty minutes, and the temperature rose to 110·4° (two thermometers, one in each axilla) ; pulse weak, 180 per minute ; resp. 60. In five hours' time temperature descended to 100·8°. Bronchopneumonia appeared at the right pulmonary base on the twenty-second day of the puerperium ; a localised empyema at the left base on the twenty-eighth day, which was aspirated. Lastly, a large right gluteal abscess formed and was incised ; the patient ultimately made a complete recovery.

Case 3.—Parametritis ; pelvic suppuration ; laparotomy and drainage eight weeks after labour ; recovery.

Case 4.—Acute septicæmia. The patient had a lingering confinement, terminated by low forceps on the perinæum. The puerperium was normal until fifth day, when she complained of headache, and temperature rose to 101°, the next day to 105°, later to 106°. No pelvic complication was at any time made out; she developed slight friction over the left pulmonary base, a systolic apical murmur, and slight bronchitis. She was admitted in a state of low muttering delirium, and died ninth day of puerperium. The postmortem showed the heart and pericardium to be normal except for slight endocardial staining; a few patches of pneumonia in different parts of the lungs. The liver large and fatty. The spleen large and pale. The lumbar glands enlarged, soft, and pinkish red in colour; at the lower part of the left kidney was a rounded tumour, the size of a small orange; it was soft in consistence, of a pinkish-white colour, and sharply demarcated from the surrounding tissues. No staining of the blood-vessels, no thrombosis in the veins or emboli were observed. At the placental site were some suppurating spots. The uterus was subinvoluted.

Case 5.—Para- and peri-metritis commencing on the eleventh day of puerperium. Gradual recovery after nine weeks. At one time aspiration was performed, but no pus withdrawn.

Case 6.—Acute sepsis on sixth day. Temp. 104·5° with rigors; no local physical signs at first. Admitted into hospital. Parametritis developed. Left hospital at her own request. Subsequent history unknown.

Case 7. *Sapræmia; perimetritis.*—The labour was normal, but strong after-pains for five days after labour, and the discharge somewhat offensive; on the fifth, violent abdominal pain with diarrhœa; the resident accoucheur saw her and admitted her with a temperature 104·8°, a very weak pulse, and the abdomen much swollen and very tender. The uterus was found fixed, and the pelvic roof occupied by a hard extremely sensitive swelling. On the twelfth day, after gradual descent of temperature, it rose suddenly to 103°. Aspiration *per vaginam* was performed and ℥ij pus drawn off; rapid recovery followed.

The placenta was battledore in one case.

The total number of children born = 625, 617 labours resulting in single births, four in twin births.

The mode of presentation of the fœtus in the *single* births was by the vertex in 596 cases, by the face in 2 cases, by the brow in 1 case, by the breech in 16 cases (one with placenta prævia), of which 2 were stillborn; by the feet in 1 case. Transverse in 1 case.

The mode of presentation in the *twin* births was—

First child . . .	V.:	Br.:	Br.:	V.:
Second child . .	V.:	Br.:	V.:	V.:

All the children were born alive.

Of the single births there were 23 stillborn children: 3 in consequence of prematurity, 2 in breech cases, 1 in placenta prævia, 1 with prolapsed cord, 1 was dead before cephalotripsy was performed. One child was dead and peeling.

Among the single births there were 313 males and 283 females.

Among the twins—

First child . . .	m.:	f.:	m.:	m.:
Second child . . .	m.:	f.:	f.:	m.:

One child presented a malformation, ectopia viscerum; it was born alive, but died in the hospital when two days old.

There were 6 miscarriages, 2 at six weeks, 1 each at two, three, five, and six months, none of which required any assistance.

Case of pelvic contraction; induction of labour; prolapse of cord; attempted forceps (Simpson-Tarnier); craniotomy.—The patient, a 2-para æt. 45, was admitted October 17th, 1893. Her previous labour eleven years ago had been extremely difficult, evisceration being necessary, and her medical attendant (Dr. Campbell Hearne) had strongly advised induction of premature labour in her present pregnancy. She had lost count of her menstrual periods, and can only state certainly that the last period was some time in March, 1893.

When standing up the patient has a well-marked pendulous belly, which she says was present in her former pregnancy. She is 55¼ inches in height, with a posterior dorsal curvature and a compensatory lumbar one; distinct thickening and anterior bowing of the tibiæ; no enlargement of the wrists.

The external pelvic measurements were found to be as follows:

Interspinous . . . = 10¼ inches.
Intercristal . . . = 10¼ ,,
Ext. conjugate . . . = 7½ ,,

The abdomen is occupied by a pregnant uterus, fœtal movements and heart sounds being made out without difficulty. The vertex was found by palpation to lie just above the symphysis pubis, slightly to the left of the median line.

Tape measurement over uterine tumour (Spiegelberg) . . . = 12¾ inches.
Calliper measurement from fundus of tumour to upper border of symphysis pubis (Sutugin) . . . = 8½ inches.

Per vaginam the conjugate diameter was evidently considerably contracted; the diagonal conjugate gave 3½ inches, but a thickened fleshy cervix interfered with accurate measurement.

From the above signs it was considered that the pregnancy was at least seven months, and that the conjugate was between two and three inches.

October 20th.—After a douche of 1 in 2000 perchloride of mercury, a gum-elastic catheter was passed into uterus between its wall and the membranes.

25th. — Laminaria tents were introduced twenty-four hours ago as no pains had set in. Labour pains regular but ineffectual at first, later, dilatation of cervix began. 1 a.m. —Cervix fully dilated and cord felt pulsating through membranes; vertex presenting; no descent of head. The house accoucheur attempted delivery by Simpson-Tarnier forceps. 4 a.m.—An anæsthetic was given, and a further attempt made by Dr. John Phillips without result, as the cord had ceased to pulsate; perforation was performed, and a difficult delivery by craniotomy forceps effected.

While still under the anæsthetic the pelvis was carefully measured three times, and it was found that the true conjugate was slightly over two inches. The puerperium was normal, and she left the hospital on the sixteenth day (1893, Hosp. No. 1832).

JANUARY 1ST TO SEPTEMBER 30TH, 1894
(9 MONTHS).

Total number of labours attended during the nine months = 464, with no maternal mortality.

Cases in which interference was necessary, or in which some abnormal cause was observed during pregnancy, labour, and puerperium:

Cephalotripsy for contracted pelvis was performed in . . . 1 case (p. 259).
Eclampsia with albuminuria, bipolar version in . . . . 1 ,, (p. 258).

Forceps was applied in 9 cases: in 7 cases for uterine inertia, in 1 case for occipito-posterior presentation, and in 1 case to after-coming head after version of second child in twin labour.

Spontaneous evolution occurred in . 1 case (p. 257).
Placenta adherent in . . . 4 cases.
Membranes only adherent in . . 1 case.
Post-partum hæmorrhage occurred in . 1 ,,
The perinæum was lacerated in . 5 cases.

Puerperal history.—No case of sepsis was observed during the nine months.

The total number of children born = 469: 459 labours resulting in single births, 5 in twin births.

The mode of presentation of the fœtus in the *single* births was—

By the vertex in . . . 446 cases.
Vertex with hand in . . 1 case.
Occipito-posterior (forceps) in . 1 ,,
Vertex with prolapsed cord (cephalotripsy) in . . . 1 ,,
By the face in . . . 1 ,,
By the breech in . . . 8 cases.
(1 with prolapsed cord, of which 3 were stillborn.)
By the shoulder (spontaneous evolution) in 1 case.

Amongst the single births there were 242 males and 217 females.

The mode of presentation in the twin births was—

1st child—	V. m. a.	V. m. a.	V. m. a.	V. m. a.	V. m. a.
2nd ,, —	Ft. m. a.	V. m. a.	*V. m. a.	V. f. a.	†V. f. a.

Of the single births there were ten stillborn children, seven males and three females; two in breech cases, one in breech case with prolapsed cord, seven in vertex cases, one of which died before cephalotripsy was performed; four children were macerated. There were three miscarriages, one at six months, a knee presenting, one at four and a half months with hydramnios, one at four months.

A case of spontaneous evolution.—The patient, æt. 31 and a 5-para, was quite regular up to December 18th, 1893; amenorrhœa since then. Fœtal movements felt first at about four and a half months, and ceased after the third week-end of July, when she was about seven months pregnant. Previous to the cessation of movements she had a severe fright followed by a prolonged attack of syncope.

September 18th, 1894.—Labour pains set in; the uterine tumour found reaching just above the umbilicus. The breasts were small and shrivelled.

Per vaginam no presentation could be made out; as the pains continued, and the os uteri dilated, the right shoulder was found presenting, the vertex lying in the right iliac fossa. An attempt at version was made under chloroform, but failed. The temperature rose to 100° F., and pulse to 120 per minute; the patient became very restless, with hot skin and dry tongue.

After the anæsthetic the patient vomited, and the shoulder was pushed down lower into the pelvis. The right axilla was pointing to the maternal left side, and the left arm bent behind the back. As the uterine pains became stronger, the right elbow presented at the vulval orifice and the hand and arm were born: the right side of the chest and abdomen next presented, and by a process of spontaneous evolution the pelvis and legs were delivered, followed by the body with the left arm folded across the back. The head was delivered without difficulty. The child was dead, of about seven months' growth, with the skin universally peeling.

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* Born 56 hours after first child; version and forceps to after-coming head.

† Two distinct and separate placentas and membranes: labour very rapid, and both placentas being born within 35 minutes of first labour pain setting in.

Case of puerperal eclampsia, albuminuria; bipolar version, delivery; cessation of eclampsia, disappearance of albuminuria.—Alice D—, married four years, æt. 27, was admitted May 9th, 1894, complaining of colicky pains in the upper part of abdomen and failure of sight. Has had three pregnancies. First terminated by craniotomy at term. Second was premature at seven and a half months, severe hæmorrhage; child lived twelve days. Third stillborn at seven and a half months; loss of sight of right eye for first nine days of puerperium, but completely regained it.

Catamenia regular and normal; last period September 17th, 1893. About April 20th "began to feel fidgety and restless," and always uncomfortable, but no other definite symptoms. On May 1st she had colicky pains in the upper part of the abdomen, which have lasted ever since. May 6th her sight began to fail. The abdominal pains were very severe, and she thought she was in labour. May 9th came to the hospital and saw Dr. Dalton, who found albumen in her urine. Dr. Hayes saw her, and reported as follows:

Per hypogastrium.—Tumour felt in abdomen extending up to umbilicus; this was felt to contract and relax, and was evidently the pregnant uterus. Fœtal heart sounds heard between the umbilicus and left anterior superior iliac spine. She was admitted complaining of great pain over hepatic and epigastric regions. Large quantity of albumen found in urine. Smart purge of jalap and scammony was given, and hot fomentations over hepatic and epigastric regions.

May 10th, 8.30 p.m.—Complaining of headache and abdominal pain. Amount of albumen in urine increased; slight œdema of leg; sighing respirations; very restless. Mustard poultice applied over loins. Passing very little water. Was given Pulv. Jalap. Co. gr. xxv, Pot. Bitart. ʒj, Zingiberis gr. x.

May 11th, 6.15 a.m.—Patient was sitting up in bed, when she suddenly fell back with a cry. The house accoucheur found her unconscious, but with corneal reflex present; she could not be roused, and took no notice of questions asked her.

6.30.—Throwing her arms about. Moaning and very restless.

6.35 a.m.—Eyelids began to twitch, and the whole face began to work. The mouth was drawn over to the right side. She became very cyanosed, and foamed at the mouth. The arms were thrown violently about. Slight twitchings of both legs. Chloroform was administered and the movements gradually ceased. Corneal reflex was not lost. Face became greyish blue in colour, and the lips very livid. Pulse hardly perceptible. Chloroform stopped after ten minutes administration.

6.50 a.m.—Better colour. Pulse small, 110 per minute. Gradually becoming restless again. Throwing the bedclothes off and attempting to get out of bed.

10.15 a.m.—Pulse 150 per minute, very soft and feeble. Urine, after boiling and settling, half albumen. Patient is quite unconscious, but cries out when the hand is placed over the uterus, which can be felt to be contracting.

Per vaginam.—Os the size of a half-crown. Patient under chloroform. Douche of 1—4000 perchloride of mercury given. Membranes unruptured. Dr. Hayes performed bipolar version; the membranes were ruptured by the sound and a foot brought down.

2 p.m.—Fœtus expelled as far as the head and shoulders. Head impacted occipito-anterior. Head delivered with difficulty, patient under chloroform; child stillborn.

9 p.m.—Very restless, attempting to get out of bed; a mixture of Ammon. Bromid. gr. xx, Potass. Bromid. gr. xxx, Chloral Hyd. gr. v, in ℥j of water was given. Urine drawn by catheter shows that the albumen is much diminished.

12th, 10.30 a.m.—Patient much better in every respect. Passed ℥lvj of urine. Hardly a trace of albumen in the urine. Can distinguish a light when it is held in front of her eyes.

27th.—Sight very much improved, and can distinguish colours. No albumen in urine. Discharged.

Case of pelvic contraction; prolapse of cord; cephalotripsy; non-rotation of shoulders; amputation of head;

version.—The patient, æt. 23 and married two years, has had one miscarriage, and is now at term with her second pregnancy. She is the youngest of a family of ten; a sister of the patient has curved legs and is about the same height, but has been confined easily at full time. Labour began during the morning of September 28th, 1894, the waters ruptured during the night; after having been in labour twelve hours she sent for the midwifery attendant, who could make out no presentation. An examination under chloroform by the assistant house accoucheur, revealed a markedly contracted pelvis.

September 29th, 1894.—The patient was seen by Dr. John Phillips about twenty-eight to thirty hours after the commencement of labour. The cord was found prolapsed and pulseless. Temperature 100° F.; pulse 130. She was therefore admitted into King's College Ward. Careful measurements were made of the pelvis, and are given later.

9.15 p.m.—Her temperature is now 101° F. Chloroform was given deeply. On inspection the outline of the fœtus was distinct; the child was lying in the dorso-anterior position, with the antero-posterior diameter of the fœtal head almost transverse. The vertex had not entered the pelvic brim.

Per vaginam.—The cord pulseless, and lying in the vagina, which is dry and hot. The vertex presenting, and the cervix dilated to the size of a wine-glass rim. The posterior fontanelle was felt to the left and a little anterior, the head being in a state of slight flexion, no moulding had taken place. Perforation was then performed, and crushing twice by means of the cephalotribe: amputation of head, spine splinters levelled, version. The pelvis was delivered with great difficulty by means of the blunt hook. The antero-posterior diameter of the pelvis was then carefully measured, and found to be very slightly over 2 inches. The puerperium was uneventful: the temperature ran up to 103° immediately after the operation, but gradually sank and was normal on the fourth day.

October 23*rd,* 1894.—The following notes and measurements were made:

The patient is 4 feet 5 inches in height, with marked anterior and lateral bowing of both tibiæ; there is pendulous belly and a deep depression over the base of the sacrum.

The anterior interspinous diameter (external to spines) = . . 9 inches.
The intercristal diameter = . . 9½ „ (+)
The external conjugate = . . 5¾ „
The posterior interspinous = . . 4½ „
The intertuberous = . . 3¼ „
Hardie's diameter = . . 2¼ „

Per vaginam.—The uterus is perfectly mobile, and occupies the left half of the pelvis; superficial laceration of the cervix on the left side. Bimanually the uterus appears quite involuted; no sound passed.

SUMMARY OF CASES IN THE GYNÆCOLOGICAL WARDS.

By JOHN PHILLIPS, M.D.

Total number of cases admitted from October 1st, 1893, to September 30th, 1894 = 247, viz. into King's College Ward, 157; into Todd Ward, 90.

A. *Summary of Abdominal Sections.*

	Recovered.	Died.	Total.
1. Removal of both ovaries and tubes for fibroid disease of uterus (oöphorectomy) . .	4	0	4 cases
2. Ovarian cysts (simple and compound) . .	8	0	8
3. Malignant ovarian disease	0	1*	1
4. Removal of both ovaries and tubes for bilateral disease (non-cystic) . . .	1	0	1
5. Cysts of broad ligament	2	0	2
6. Myomectomy with unilateral pyosalpinx .	1	0	1
7. Suppurating ovarian cyst and ovarian abscess	2†	1*	3
	18	2	20
8. Sarcomatous growth of great omentum . .	1	0	1
9. Combined abdomino-vaginal hysterectomy for carcinoma fundus uteri	0	1‡	1
10. For hernial protrusion after ovariotomy .	2	0	2
11. Abdominal incision, three for pelvic suppuration and one exploratory	4	0	4

The more interesting of the above have been given in detail in the following pages.

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* Vide pp. 269, 273. † Vide p. 272. ‡ Vide p. 275.

1. *Removal of both ovaries and tubes for fibroid disease of the uterus (oöphorectomy).*

1893. Hospital No. 2013.—The patient, Mary S—, a 2-para æt. 40, was first seen in the O. P. room, October 31st, 1893. She was then flooding and extremely weak.

Her last child was born thirteen years ago. Catamenia first appeared at fourteen to fifteen years of age, quite regular until four years since, always copious, six to eight days' loss with slight pain. Slight increase in amount during the next two years, but otherwise she enjoyed good health.

Two years ago was seized, towards the end of a normal period, with profuse flooding, passing a large number of clots; this was accompanied by great abdominal pain, and continued for a month. She has never been regular since, losing every month, or only with an interval of two or three days. The loss is always accompanied by passage of clots and intense pain, like labour pains. The present hæmorrhage has been going on for five weeks. She is losing flesh, has become extremely pale, and three weeks ago both her legs began to swell, especially the left; copious leucorrhœa. On examination P. H., halfway up to umbilicus and stretching transversely across the lower abdomen is a hard, slightly irregular, somewhat tender mass. P. V., the uterus is large, cervix healthy on its surface; anterior lip much thickened. The sound was not passed, but a gum-elastic bougie entered seven inches into the uterine cavity. The mass in the hypogastrium and the cervix move together bimanually. Copious hæmorrhage going on. Both legs puffy, but the left more so; both pitting on pressure.

November 9th, 1893.—After the usual preparation a 3½-inch incision was made, the lower angle of wound being one and a half inches above symphysis pubis. Both ovaries were removed. the right being very close to the uterus, and the substance of the muscular tissue was slightly pricked by the transfixion needle. Silk ligatures to stump; no adhesions. The fibroid was found to occupy anterior wall of uterus. The peritoneum was closed by continuous catgut suture, the muscles sutured with silk and the integuments with catgut.

Metrostaxis occurred twenty-four hours after operation, and lasted two days; the stitches were removed on the eleventh day.

Operator, Dr. Wm. Playfair.

2. *Ovarian cysts (simple and compound).*

1894. Hospital No. 78.—The patient, Eliza K—, æt. 64, has had one child forty years ago. The menopause occurred nineteen years ago, during which period she suffered no inconvenience. She remained quite well until some time in 1891 (exact date uncertain), when she suffered from several attacks of severe pain in the lower hypogastrium; these became gradually more frequent, and she noticed that the abdomen was increasing in size. Dr. Viney, of Chertsey, saw her and tapped the abdomen in May, 1892, drawing off about eighteen pints of fluid.

Subsequent tappings were necessary in November, 1892, and on April 8th, August 18th, September 30th, November 4th, December 2nd and 31st in 1893. The fluid withdrawn was of a dark brownish colour, and seemed to become more viscid at each operation; at the last tapping it would barely pass through the tube. As the fluid increased in quantity she experienced a certain amount of difficulty in breathing, and suffered from palpitation.

January 8th, 1894, she was admitted. The abdomen was enormously distended and pendulous; the superficial veins on right side much dilated, slightly so on the left side; dulness over the whole, swelling up to one and a half inches of ensiform cartilage, and in both flanks except when the patient is turned on to left side, when the right flank is resonant on percussion. A cross-tap can be elicited over the whole tumour.

The following measurements were made:
Largest circumference (just above umbilicus) = 46½ inches
From ensiform cartilage to umbilicus . = 7⅛ ,,
From umbilicus to symphysis pubis . . = 9½ ,,
From right anterior superior spine to umbilicus = 12 ,,
From left anterior superior spine to umbilicus = 11 ,,

These were again taken four days later, and found to be 46½, 8¼, 9½, 13, and 12¾ inches respectively.

Vaginal examination gave a negative result.

Operation.—January 23rd, 1894, an incision four inches in length, starting one inch below umbilicus. A few adhesions at site of tappings were torn through. The cyst was tapped, and twenty pints two ounces of fluid removed; the pedicle was found attached to right side of uterus, and as thick as the forefinger; ligature after transfixion and a few vessels tied in the stump. Peritoneum muscular layer and skin closed by fine silk sutures. No drainage. The tumour was a multilocular, thin-walled ovarian cystoma of right side. Subsequent progress was normal, with the exception of slight return of old cystitis on eleventh day.

Operator, Dr. Wm. Playfair.

Elizabeth H— admitted January 26th, 1894, for abdominal swelling. Catamenia normal in quantity and quality, and perfectly regular until December, 1891. Since then she has had complete amenorrhœa. Abdomen first began to swell towards the end of 1891. In August of that year she had an attack of rheumatic fever, and dates her present trouble from the end of this fever. After the subsidence of the rheumatic fever she resumed her work (waitress), and continued in it until 1893, when she consulted Dr. Dalton on account of heart trouble. She has never had any abdominal pain.

Per hypogastrium.—Abdomen is dull on percussion save just above symphysis pubis, immediately below the ensiform cartilage, and just outside the lower half of right rectus. General contour of tumour is lobulated. Definite fluctuation can be obtained all over the abdomen.

The patient has double mitral disease.

On February 7th the abdomen was opened. A large multilocular cyst was exposed and brought to the surface. A Spencer-Wells trocar was plunged into the cyst, but the contents were so viscid that they could not escape through the trocar. The cyst was therefore brought well out of the abdomen and cut into; much thick yellow fluid and dark-coloured blood from some of the daughter cysts escaped. The pedicle was long, and there were no adhesions. The cyst was removed in the usual way. The right ovary was normal, and therefore was left. The abdomen was closed by separate continuous sutures. Seven days after the operation the wound had completely healed by first intention. On the 15th the wound separated, and a quantity of clear fluid escaped. On the following day the wound was reopened, the edges refreshed and then stitched together. Complete union followed and a good cicatrix resulted. The temperature after the operation never rose above 99°, and on March 18th she left the hospital.

Operator, Dr. Hayes.

1894. Hospital No. 420.—The patient, Maud H—, a multipara æt. 25, and married four years, had suffered much pain in the lower hypogastrium after a supposed early abortion three years ago. Since then she has had constant pain, worse on movement, with dysmenorrhœa and menorrhagia, the catamenia lasting sometimes continuously for two months. She has been under much local treatment, and has lain in bed for six weeks without the slightest benefit. The bladder has been very irritable and the urine passed with pain for two months. She has lost much flesh.

On examination *per vaginam* both ovaries were found enlarged, the left less than the right; the latter was fixed by adhesions. Both were extremely tender to the touch, and gave a sensation of nausea if pressed.

March 8th, 1894.—The abdomen was opened by a 2½-inch incision; the right ovary enlarged to size of a Tangerine orange, cystic and fixed with a few old adhesions. Tube quite healthy. Pedicle pierced and secured with silk ligatures. The left ovary enlarged and cystic, non-adherent, ligatured and removed.

After operation there was very considerable metrostaxis, otherwise she made a good recovery until the twentieth day, when the line of incision broke down with formation of pus. The sinus was laid open freely, and healing took place rapidly.

Operator, Dr. William Playfair.

Jessie M—, æt. 42, married. Admitted April 30th, 1894, complaining of pain in abdomen and thighs and increasing size of abdomen. For the last two years the periods have been diminishing in quantity, but were quite regular until November, 1893, when she ceased completely, only suffering pain every month when the period ought to have occurred. The pain has been increasing for the last two months, so much so that she has had to keep to her bed. The patient is anæmic, rather sallow, and fairly well nourished, but says she has been losing flesh for the last three months.

Per hypogastrium.—A smooth, regular, elastic tumour is felt in the left iliac and lumbar regions; it is dull on percussion, but there is no fluctuation; free fluid is present in the abdomen.

Per vaginam.—The cervix is drawn up, and the body pushed towards the symphysis pubis. The abdominal growth can be felt in the posterior cul-de-sac. Right and left fornices free. The sound passes normal distance, and shows the uterus to be in front of the tumour.

May 18th.—Examined under chloroform. Surface of swelling is found to be nodular; tumour felt in posterior cul-de-sac and extending into region of right broad ligament; it is apparently quite mobile.

May 21st.—*Operation.*—On opening the abdomen a large quantity of clear yellow fluid escaped. Both ovaries were found to be diseased, the left one being about the size of a fœtal head, and was partly cystic and partly solid. The cysts contained a clear-coloured fluid. The right ovary was also partly cystic and solid, the cysts containing blood; both were removed. Patient made an uninterrupted recovery after the operation, but was very slow in picking up her strength and recovering from her anæmia.

A microscopical examination of the diseased ovaries showed them to be cystic, fibro-myomatous in character.

Operator, Dr. Hayes.

1894. Hospital No. 798.—The patient, Ada J—, æt. 30, a 5-para, was fairly well up to six years ago, when she had a white leg after labour; since then a good deal of hypogastric pain. Her last child was born eighteen months ago, the labour and lying-in being quite normal; since then she has suffered from severe dysmenorrhœa and menorrhagia; the pain lasts during the first three days of the flow, and is so great that she is obliged to go to bed. This occurs every twenty-one days, the loss lasting fourteen and the interval seven days: large clots are passed. She is losing flesh rapidly.

On examination the uterus was found to be semi-mobile, but in its normal situation; the cavity 3½ inches. In the posterior cul-de-sac a very distinct rounded swelling can be made out, acutely tender and not freely mobile. Much pain and hæmorrhage followed the examination.

May 10th, 1894.—Abdominal incision 2½ inches in length, commencing 1 inch below umbilicus; left ovary enlarged and cystic, the size of an orange; it was slightly adherent. The pedicle was transfixed with silk and the tumour removed. The right ovary was found in a similar condition and of the same size; it was also removed. Continuous sero-serous musculo-muscular and cutaneo-cutaneous sutures of silk to unite the abdominal wound.

A normal convalescence was pursued, and the stitches were removed on the tenth day.

Operator, Dr. William Playfair.

1894. Hospital No. 1259.—The patient, Lucy S—, æt. 25, a 3-para, first applied for swelling of her abdomen after her confinement, which had taken place three weeks before her visit. Her last catamenia ceased July 30th, 1893; she then became pregnant. At the sixth month she noticed that she was as large as she usually was at the ninth month and at term she thought she was pregnant with twins from her great size. On June 11th, 1894, her labour took place, having had pains for a month previous, and was quite normal. She had prolapse of the uterus on the second day of the puerperium while defecating. She noticed her abdomen on the tenth day was unusually large, and on the twelfth day she had a severe attack of right-sided pain lasting nearly a week. There has been gradual increase in the size of the abdomen since labour. No trouble with the bladder at any time.

On examination *per hypogastrium,* on inspection the abdomen occupied by a well-defined swelling, more prominent to the right and below; on palpation there is distinct fluctuation and cross-tap to be felt all over the swelling, which is not tense, although very tender, particularly on the right side. Percussion gives a dull note all over the swelling; both flanks are resonant, note unaltered by shifting patient's position.

Measurements.—Girth at umbilicus 31½ inches; from ensiform cartilage to umbilicus 7½ inches; from umbilicus to symphysis pubis 6½ inches; right anterior superior spine to umbilicus 7 inches; left anterior superior spine to umbilicus 6¼ inches.

Per vaginam.—The os admits the tip of the examining finger, and is lacerated on the left side; the whole uterus is low down and semi-mobile, the fundus retroverted.

The patient's temperature was of the hectic type for fourteen days, the evening elevation varying from 100° to 103°, the morning from 99° to normal.

July 17th, 1894.—*Operation.*—After the usual preparation an anæsthetic was given, and an abdominal incision made commencing at the umbilicus, and extending downwards to within one and a half inches of the symphysis pubis. The cyst being exposed and tapped, eight pints of dark-coloured slightly viscid fluid escaped, together with some large yellowish flaky material: there were numerous fresh adhesions between the cyst wall and the parietal peritoneum; these were broken down. Firmer adhesions were encountered between the great omentum and the cyst, and considerable bleeding followed their tearing through. The pedicle, which was broad but thin, was ligatured with silk by transfixion. The left ovary was the affected one, the other being quite healthy. A glass drainage-tube was inserted, and the abdominal wall sutured in layers.

The subsequent history was uneventful. The temperature always remained below 100°. After the operation, the tube was removed in forty-eight hours, the stitches on the tenth day. She left the hospital a month after the operation quite well.

Operator, Dr. Wm. Playfair.

3. *Malignant disease of ovary.*

Emma D—, æt. 51, admitted December 28th, 1893. Married, but never pregnant. Catamenial history normal; the menopause occurred four and a half years ago. The patient complains of pain in lower part of the abdomen.

In April, 1893, was taken with vomiting, and severe pain in abdomen, from which she quite recovered; she had another and similar attack in the following July. Since then has had other attacks every three or four weeks, the last being on December 12th. Pain generally lasts one day, and is very severe.

On December 28th, *per vaginam*, right fornix completely filled by an elastic swelling (?) fluctuation. It abuts close on to the uterus. *Per hypogastrium* the tumour can be felt above Poupart's ligament. Impulse distinct bimanually; obviously adhesions present.

January 3rd, 1894.—*Operation.*—The abdomen being opened, the hand was passed into it, and a rounded swelling in right side of pelvis discovered. Adhesions were separated, and during manipulation the tumour ruptured and pus escaped; a large quantity of dark grumous fluid welled up through the incision. A piece of adherent intestine was carefully separated from the tumour; the pedicle was ligatured, and the tumour removed; abdomen was then carefully irrigated and the wound closed. Patient progressed well for the first eighteen hours, and then became very much collapsed, and gradually sank and died on the third day. Temperature on second day 99·4° F. for four hours, otherwise never rose above 99°.

Post-mortem.—A portion of the small intestine was found to have slipped through a congenital hole in the mesentery, and to have become strangulated. Peritoneum around it acutely inflamed. Wound and general peritoneal lining free from any acute inflammation, but there were nodules of a sarcomatous character distributed over portions of it. The tumour of the ovary was malignant. The strangulation of intestine was, unhappily, not recognised during life—it could have been readily freed.

Operator, Dr. Hayes.

4. *Removal of both ovaries and tubes for bilateral disease (non-cystic).*

1894. Hospital No. 1240.—Rosina F—, a single woman æt. 35, has been under treatment for eight years for chronically inflamed left ovary; the ovary has been slowly increasing in size, and the pain, menorrhagia, and dysmenorrhœa in severity. She has twice been an in-patient with temporary benefit only. Her catamenia now last fourteen days, are profuse, and so painful as to cause her to go to bed for the first three days. She is unable to earn her livelihood owing to this periodic invalidism. She has lately developed umbilical pain, dysuria, and increased frequency of micturition, with considerable loss of flesh. On examination there was tenderness on deep pressure in the left iliac fossa. *Per vaginam* the left ovary was much enlarged, extremely tender, slightly fixed and prolapsed; the right ovary was tender and slightly enlarged.

July 10th, 1894.—Abdomen opened by 3-inch incision in the usual situation. The left ovary and tube being freed from old adhesions, the pedicle was transfixed and ligatured; the mass being cut away, the ovary was found enlarged and full of cysts the size of a pea, and containing a thin watery fluid; the stroma was scanty and fibrous; the Fallopian tube was deep purple in colour and slightly thickened. The right ovary and tube healthy, also removed; on section the ovary presented a good specimen of a recent corpus luteum. The abdomen was closed by suturing the three layers separately with carbolic silk. Convalescence was normal in every way.

Operator, Dr. Wm. Playfair.

6. *Myomectomy with (unilateral) pyosalpinx.*

1894. Hospital No. 346.—The patient, Mary O'C—, a married nullipara æt. 38, was operated upon thirteen years ago in St. George's Hospital for conical cervix (bilateral incision); this was followed by para- and peri-metritis. She was seen by her medical attendant, Mr. F. H. Corbyn, in 1890, who found a small swelling in the lower hypogastrium, slightly to the right. There was some question as to a miscarriage having taken place owing to severe hæmorrhage, and Dr. John Phillips saw her. A fibroid outgrowth of the size of an orange growing from the right side of the uterus was diagnosed. She was kept under observation and careful measurements taken every four months until January, 1892, when the tumour reached up to the umbilicus. The fibroid was evidently subserous; the uterine cavity was three inches in length. The catamenia have gradually become lessened in quantity, and now only last two days.

February 24th, 1894.—The tumour has grown rapidly since her last visit. The abdomen is occupied by a large, fairly rounded, smooth-surfaced, painless swelling. It reaches five inches above umbilicus, and its upper border is three inches from the epigastric notch. The whole mass is slightly mobile. There is resonance in the flanks and epigastrium, but dulness over surface of tumour on percussion. The umbilicus is slightly discoloured, of a brownish tinge, retracted nearly half an inch; there is a well-marked line of pigmentation from umbilicus to symphysis pubis.

Per vaginam.—The vagina is shallow, the uterus pushed over to the left side, the sound passes three and a half inches in the normal direction; in the right half of the pelvis is a hard, extremely tender swelling, apparently not attached too intimately to the uterus or the abdominal swelling. The large abdominal swelling cannot be felt.

March 1st, 1894.—Consultation with Dr. Playfair, and an anæsthetic given. The above physical signs were confirmed and the diagnosis made between a solid growth of the ovary with a short pedicle, or a pediculated subserous fibroid growing from the right cornu of uterus.

March 15th, 1894.—Operation; abdomen opened; the tumour was found to be attached by a pedicle, one inch long and as thick as the wrist, to the right cornu of the uterus. Attachments to the cæcum and transverse colon were broken down, and an elastic ligature placed round the pedicle, followed by delivery of tumour through abdominal wound and application of the serre-nœud; the tumour was cut away and the flaps carefully pared and adapted. The muscular tissue sutured to muscular tissue, and finally sero-serous sutures inserted; the stump was kept outside the wound, as it was thought safer to treat it extra-peritoneally, the vessels being extremely large, and the tissue almost entirely composed of muscular fibre. On further exploration of pelvis, a large sausage-shaped tumour was found fixed in the floor of the pelvis on the right side; it was four inches long and of the size of dilated colon. After breaking down all the adhesions to cæcum and uterus the broad ligament was ligatured and the mass removed. On opening it ℥iv of fœtid pus escaped; the ovary was found flattened and atrophied. The hæmorrhage was severe and the patient's condition now somewhat alarming. The left tube and ovary were healthy and were left, and the abdomen closed; weight of tumour 5½ lbs. The convalescence was uneventful; the serre-nœud came away on the fourteenth day, the pedicle being extremely tough. The temperature remained below 100° F. throughout.

Operator, Dr. John Phillips.

7. *Suppurating ovarian cyst and ovarian abscess.*

Suppurating ovarian cyst.—Case 1. Emma H—, æt. 39, married, was admitted November 8th, 1893. The patient has had seven children but no miscarriages; last confinement three years ago. She complains of pain in right groin and lower part of abdomen. At the beginning of October, 1890, one day, before her period ought to have commenced, patient was digging in her garden, when she was suddenly taken with severe pain in her abdomen, especially in the region of the right groin; the pain became worse during the next few days, and she had to take to her bed. The period came on naturally, and the pain was neither relieved nor increased. The period for the present month was due six days ago, but has not occurred. The patient is an anæmic-looking woman; heart and lung sounds normal. Anorexia and loss of flesh; much pain of a cutting and throbbing nature in right groin.

Per vaginam.—Roof of right fornix considerably lowered by a slightly mobile swelling, which can also be felt above Poupart's ligament. It extends somewhat into the posterior cul-de-sac; there is some tenderness. The os uteri admits the tip of the examining finger. Double laceration of the cervix. Temperature 99° Fahr.

November 13th.—Sound passed three eighths of an inch beyond normal and somewhat to the left; the tip can be felt through the abdominal wall; uterus appears situated in front of the tumour. Temperature from 8th to 15th varied between normal and 100·4° F.

15th.—Operation; abdomen opened in the middle line; the intestines were noticed to be much redder than normal, and were studded with small yellowish masses about the size of a pea. One or two of these were ligatured and removed, and were found to contain cheesy matter. A round, tense, elastic swelling was felt in the right iliac region, a few adhesions were broken down, and a piece of adherent intestine carefully detached. The swelling was carefully separated from the uterus, to which it was adherent. During manipulation the tumour ruptured, and thick yellowish-green pus escaped. The pedicle, apparently a portion of the broad ligament, was then ligatured and the tumour removed. The abdomen was thoroughly flushed with warm boracic lotion. A glass drain-tube was inserted; the patient was much collapsed after the operation.

January 6th, 1894.—The drainage-tube was removed; offensive discharge from the base of the pelvis had rendered this impossible before.

August, 1894.—General condition good, has gained in weight; still has a small sinus at site of the drainage-tube.

Operator, Dr. Hayes.

Case 2.—Mary Ann R—, æt. 41, married, admitted under Dr. Yeo, May 7th, 1894, into Twining Ward. She has suffered from bearing-down pains and weakness in left side for seven years, increasing menorrhagia for three years, and dysmenorrhœa for six months. Suddenly seized on April 4th with pain, vomiting, diarrhœa, and feverish symptoms; she also observed that a swelling in the left side of the abdomen, which she had noticed for a few years, was increasing in size.

On May 11th Dr. Hayes reported as follows:

Per hypogastrium.—A considerable prominent, smooth, tender swelling, with a distinct upper rounded margin. The tumour occupied the left iliac region, and extended into the hypogastric and umbilical regions.

Per vaginam.—Cervix greatly thickened and hypertrophied, as was also the whole lower part of the body of the uterus. The right fornix is completely filled up, and the roof lowered by the tumour and the swelling which extends directly from the cervix above the vaginal junction. The posterior cul-de-sac and the right fornix are free, the anterior is obliterated. The os uteri admits the tip of the finger. Sound passes 1¾ inches beyond the normal. Temp. 102° F.

May 13th.—She had a rigor lasting forty minutes, the temperature rising to 104° F.

16th.—She passed a bad night, and there was much abdominal pain. The abdominal tumour had completely changed in character. The clear definite upper margin had lost its distinct outline. The whole abdomen was much fuller, and no distinct tumour could be distinguished. At 3 p.m., her general condition had changed much for the worse. She was very much collapsed. Pulse very rapid, week, feeble, and irregular. It was considered that the ovarian cyst had ruptured, and that immediate operation was her only chance. On opening the abdomen fœtid pus was found free in the cavity, and very general peritonitis; a ruptured ovarian cyst was removed. The abdominal cavity was washed out with warm boracic lotion, a drainage-tube inserted, and the patient got back to bed. During the operation the peritoneum was seen to be intensely inflamed, and portions of it covered with flakes of lymph. The patient never rallied from the operation; within ten hours her temperature rose to 105·4°, and death ensued.

Operator, Dr. Hayes.

Post-mortem examination.—Intense inflammation of the peritoneum present, with a considerable quantity of purulent fluid. There was a large interstitial fibroid in the posterior wall of the uterus. The right ovary was enlarged and cystic. The tumour removed was a large tubo-ovarian cyst which had suppurated and ruptured.

Note.—The operation was only undertaken as a last resource, the patient being practically moribund at the time.

For Case of Ovarian abscess, vide p. 101.

Operator, Dr. John Phillips.

9. *Combined abdomino-vaginal hysterectomy for carcinoma fundus uteri.*

The patient, L. A—, a single woman æt. 58, was first seen by her medical attendant, Mr. Harrison Low, for vaginal discharge of yellow colour, occasionally blood-stained. This discharge has been noticed for twelve months, and during the past two months it has become pinkish, and small clots have passed on straining or after exertion. The menopause occurred four years ago, and was natural in every way; loss of flesh has been noticed during the past six months.

Any attempt at vaginal examination produced so much pain that on March 31st, 1894, a complete exploration was made under an anæsthetic. The uterus was found large, and about the size of a baking pear, and freely mobile; the sound passed 3½ inches quite easily; the os uteri externum was small and almost pin-hole; much fœtid pinkish discharge was observed issuing from the cervix. The vagina admitted two fingers with difficulty. With regard to future treatment, thorough dilatation was performed until three fingers could be introduced; the cervix was slightly dilated, and a portion of breaking-down growth (subsequently found to be malignant) removed by curette.

For nine days her temperature was high at night (100° to 101° F.) and slightly lower in the morning, and she was evidently suffering from auto-infection. Careful antiseptic douches (1 in 2000 perchloride of mercury) were given to correct the fœtor of the discharge.

April 8th.—Consultation with Dr. Playfair, and total extirpation decided upon.

9th.—Lithotomy position. The sound being passed into the bladder, the usual incisions were made in the vaginal walls and the cervix cleared, an intermittent douche of 1 in 4000 being used to wash away blood and discharge. Clamps were applied to the broad ligaments and the intervening tissue cut. It was now found impossible to bring the uterus through the narrowed vaginal outlet, and as traction only resulted in slight tearing away of the cervix, removal of the uterus by an abdominal incision was decided upon. Fresh instruments were used, and the usual incision in the median line made; the uterus was found quite free, and was lifted out of the pelvis. Although every care was taken to prevent the putrid discharge from entering the peritoneal cavity, a small amount undoubtedly found its way there. On inspecting the broad ligaments they were found well controlled by the clamps. A boracic peritoneal douche was given, and the whole track of operation thoroughly cleansed. The operation lasted one hour and forty minutes; the patient was not markedly collapsed.

On examining the uterus, the whole of the fundus was found occupied by a breaking-down glandular cancer. In two places the muscular element of the uterine wall had been entirely eroded, leaving only peritoneum as a covering. The disease had begun to infect the left Fallopian tube, but all the growth was removed. No projections were apparent on the outer uterine surface. Cervix quite healthy.

The specimen is now preserved in King's College Museum (*vide* p. 361).

The patient recovered well from the shock, but forty-eight hours afterwards high temperature set in with other signs of sepsis, and she died on the fourth day.

Operator, Dr. John Phillips.

B. *Summary of cases other than abdominal sections.*

$$\left.\begin{array}{ll}\text{In King's College Ward} & = 142 \\ \text{In Todd Ward} & = 77\end{array}\right\} = 219 \text{ cases.}$$

(*a*) *King's College Ward.*

I. Those requiring operative interference, 58 cases.

Labial abscess	2 cases.
Urethral caruncle	3 ,,
Vulval warts	1 case.
Ruptured perinæum	2 cases.
Prolapsus uteri (colporrhaphy)	2 ,,
For cystocele (Stoltz)	1 case.
Hypertrophic elongation of cervix (*vide* page 277)	1 ,,
Fibroid polypus	2 cases.
Trachelorrhaphy	2 ,,
Pelvic abscess (vaginal incision)	2 ,,

Dilatation of cervix with curetting in 40 cases: viz.

Endometritis and sterility	1 case.
Endometritis, senile, gonorrhœal, &c. (*vide* pp. 278, 279)	8 cases.
Spasmodic dysmenorrhœa	4 ,,
Subinvolution and retroversion	2 ,,
Menorrhagia (from retained products of conception)	8 ,,
Menorrhagia from fibroids	2 ,,
Sapræmia	4 ,,
Diagnostic purposes	11 ,,

The more interesting cases in the above series are given in detail later on. The dilatations of the cervix were all performed under strict antiseptic precautions, mercurial solutions (1 in 1000 for hands, 1 in 4000 for douche) being used. The metal and vulcanite Hegar's bougies were employed. After the dilatation was completed the uterine interior was swabbed out with Linimentum Iodi, and the vagina packed with iodoform gauze. No temperature of 100° or over was noticed during the convalescent period, and no complications such as parametritis, perimetritis, or hæmatocele, were observed.

II. Among the 142 cases it was necessary to administer an anæsthetic twenty-three times for the purpose of more accurate diagnosis, more especially in cases of swellings in the posterior quarters of the pelvis, and to decide upon the advisability of operative interference in cases of malignant disease of the cervix uteri.

Hypertrophic elongation of cervix, sterility, dyspareunia; plastic operation, subsequent pregnancy, and normal labour.

1893. Hospital No. 2318.—The patient, æt. 27, a nullipara, and married ten months, first came under the care of Dr. John Phillips for something obstructing the vagina and rendering coition impossible. She had noticed the lump in the vagina for six years, but it had remained in that state until her marriage. Catamenia commenced at sixteen, always regular, three days' loss, slight groin-ache during first twenty-four hours.

Per vaginam.—The orifice of the vagina is occupied by the cervix, which can be slightly protruded at the vulval orifice on straining; the posterior cul-de-sac is of the normal depth. The sound passes in the normal direction three and a half inches. Vesico-rectal examination indicates the presence of the fundus uteri.

December 30th, 1893.—The patient being anæsthetised and placed in the lithotomy position, the cervix was pulled down and fixed by volsella. A vertical incision was then made on either side of the cervix, about three quarters of an inch in depth, producing artificial bilateral laceration; the lining membrane of the cervix was then raised from the anterior and posterior flaps, which latter were then cut away. The free flaps of mucous membrane were then stitched to the cut vaginal edges. The sound was found to pass two and a half inches. Vaginal plugging with antiseptic gauze completed the operation. The patient made an easy recovery; the stitches were removed on January 8th, 1894; slight cystocele was noticed.

June 23rd, 1893.—The dyspareunia is entirely relieved, and she is five months pregnant.

October 27th, 1893.—Labour terminated at 3 p.m., after lasting about thirty hours. Dr. Jeffree (Clapton), who attended her, considered it was normal in every way, the cervix dilating easily but slowly; the placenta came away in twenty minutes.

Note.—The patient was examined five weeks after labour, and the cervix presented an exactly similar condition to that observed before parturition; no laceration had occurred, and involution was good.

Senile endometritis with small growths in the vagina, simulating primary sarcoma of uterus and secondary vaginal deposits.

1894. Hospital No. 1128.—The patient, æt. 57, and with one child born thirty years ago, was quite well until two months ago, when she felt giddy and sick in the morning, with pain in the lower hypogastrium and vagina; two days later she began to have a hæmorrhagic discharge, which lasted a week; she was then clear for fourteen days, followed by slight hæmorrhage during one night. A week later she noticed a large quantity of thick yellow discharge, which was very offensive; this has continued on and off ever since, but has become more watery and less offensive. She complains of darting pains through her womb, but otherwise nothing abnormal. She is certainly losing flesh. During Dr. Playfair's absence she was admitted under the care of Dr. John Phillips.

On examination *per hypogastrium* there is deep-seated tenderness on pressure over the symphysis pubis; the inguinal glands are not enlarged. *Per vaginam* the uterus is enlarged and mobile, the sound passing three and a half inches easily, and its withdrawal followed by a slightly offensive blood-stained discharge. On the posterior surface of the vagina, one above the other, are two small buds or button-shaped growths, one immediately above the site of the hymen, the other half an inch higher up the vagina; a third is felt to the right and slightly anterior to the atrophied cervix. They are slightly raised above the surface, of a dark pink colour, and about half an inch in diameter; handling them freely causes no hæmorrhage.

June 23rd, 1894.—An anæsthetic was given; the cervix was dilated up to No. 16 (Hegar). During this process much pink-coloured grumous but inodorous discharge escaped from the os uteri; the sharp flushing curette was freely applied to the uterine interior and large flakes of tissue brought away, half filling a wine-glass. Lin. Iodi was applied to the scraped surface. A piece of the growth to the right of the cervix was exsected for further examination. Seven days later the site of the incised growth was examined and found to be covered by healthy epithelium, but of the same deep pink colour; microscopical sections showed that both the uterine scrapings and the button-shaped growths were inflammatory in character, no signs of malignancy being found. The patient lost all discharge, made flesh rapidly, and left the hospital. She remains free from all her symptoms three months after the operation.

Removal of right and left ovarian cysts at separate operations; gonorrhœal endometritis; repeated curetting and application of nitric acid.

1893. Hospital No. 2117.—The patient, æt. 32, a 2-para, was confined last twelve years ago, since which time she has been ailing, although labour and puerperium were normal in every respect. Nine years ago the left ovary was found cystic and removed. Three years ago, she applied for much pain on right side, hæmorrhage and backache. On examination the stump of the left broad ligament was found as a small nodule and slightly tender; the right ovary was enlarged and of the size of a Tangerine orange. This swelling was found at the end of two months to have increased in size. On September 27th, 1891, the right ovary and tube were therefore removed as before, by Dr. Playfair; the ovary cystic, adherent to the tube. She left the hospital well. A week after her return home she was suddenly seized with profuse yellow vaginal discharge, bladder irritation, and dysuria. On inquiry her husband was found to be suffering from cystitis after gonorrhœa. The vaginal discharge was cured, and she was not seen again until May 17th, 1892, when she came complaining of much discharge, which caused great soreness and irritation of the vulva and perinæum; complete amenorrhœa had occurred since the second operation. The vulva was found excoriated and red, and the discharge coming from the cervix. The uterine cavity was two inches in length. September 1st, 1892, she was admitted, the uterus dilated under ether, and the sharp curette applied, followed by the application of Lin. Iodi. October 3rd, 1893, she had a recurrence of the discharge with accompanying symptoms of irritation; signs of the menopause were still present. She was admitted March 21st, 1894. The sound passed one and three quarter inches; the discharge was as before. Dilatation, curetting, and swabbing of the uterine cavity with nitric acid was performed. She remained free from the discharge until September, 1894, when it was as bad as ever. She was again admitted September 13th, 1894, under the care of Dr. John Phillips, in Dr. Playfair's absence. Sound passed only one and a half inches, and great care was necessary in dilating this atrophied uterus. Dilatation was extremely easy, and took only twelve minutes. The sharp flushing curette was freely used, and fuming nitric acid applied subsequently.

On the fourth day after operation the discharge became extremely offensive, and on the eighth day almost fæcal; it was counteracted by eucalyptus bougies. On examination the os uteri was widely dilated, and allowed admission of the finger to the fundus uteri, where a slough was detected. This came away two days afterwards, and turned out to be a cast of the uterine interior. The discharge lessened at once, and ceased entirely a month after operation, when the patient left the hospital.

III. Those requiring no operative interference = 74 cases, viz.—

Gonorrhœa with pregnancy	1 case.
Cystocele and rectocele	1 ,,
Endometritis	12 cases.
Retroversion and flexion	8 ,,
Incarcerated retroverted gravid uterus	1 case.
Total procidentia	4 cases.
Incarcerated procidentia	1 case.
Fibro-myomata	11 cases.
Fibro-myomata with pregnancy	2 ,,
Chronic ovaritis	7 ,,
Para- and peri-metritis	6 ,,
Pelvic hæmatocele	5 ,,
Chronic cystitis	4 ,,
Sarcoma of pelvis	1 case.
Malignant disease of cervix too advanced for operation	7 cases.
Sarcoma of fundus uteri	1 case.
Tubercular peritonitis	2 cases.

IV. Anomalous cases.

Pelvic pain, hysterical tympanites, spurious pregnancy, insanity, neurosis, treatment refused, &c.	7 cases.
V. Transferred to other wards	3 ,,

(β) *Todd Ward.*

Dilatation and curetting in twenty-seven cases.

Of these, twenty-five were cured at first operation, and two after a second operation. Of the twenty-seven, two had slight rise of temperature after the operation, and in both cases the temperature fell to normal after an aperient. Average stay in hospital was fifteen days. Para- and peri-metritis without operative interference, four cases; trachelorrhaphy in one case; ruptured perinæum in one case; ovaritis in seven cases.

For a case of eclampsia complicating labour *vide* Report of Obstetrical Department, p. 258.

REPORT

OF

DEPARTMENT FOR CHILDREN.

By T. C. HAYES, M.D.

A. *Summary.*

Total number of children treated in Pantia Ralli Ward from October 1st, 1893, to September 30th, 1894 = 171.

Of these, cured, 75; improved, 26; *in statu quo*, 16; transferred, 9; died, 45.

Pneumonia, 30 cases. Cured, 15; of these only three were under two years of age. Died, 15; of these only three were over two years of age.

Bronchitis, 11 cases. Cured, 9; died, 2.

Cardiac disease, 4 cases. Improved, 3 (mitral regurgitation); died, 1 (endo- and peri-carditis).

Tuberculosis, 16 cases. Improved, 4; died, 12.

Chorea, 7 cases. Cured, 2; improved, 5.

Gastro-intestinal irritation, 31 cases. Cured, 27; died, 4.

Marasmus, 6 cases. Cured, 3; died, 3.

Other ailments not included in above category (eczema, psoriasis, vulvitis, &c.), 20 cases. Cured, 16; improved, 4.

Infantile paralysis, 8 cases. Cured, 1; improved, 7.

Ascites without any apparent cause, 1 case. Cured 1.

B. *Cases of interest.*

Irene G—, æt. 6, admitted May 1st, 1894, for heart disease and swelling of the feet. Was never ill before November, 1893, when she had some severe illness, and was attended by a medical man who said she had influenza. She was feverish and had pains all over her, but apparently no definite joint trouble. He ceased attending her in January, 1894, and the child went into the country, where it was noticed that she was very "short-breathed" and easily tired. In February her mother first noticed that her "heart palpitated after any exertion." Her feet have been swollen for the last two weeks.

Present condition.—The patient is very anæmic, and there is œdema of both legs; the abdomen is prominent; œdema of the subcutaneous tissues of the back. *Heart-sounds.*—Impulse very diffuse, with marked presystolic thrill; cardiac dulness increased. Presystolic and systolic murmurs heard at the apex; systolic murmur conducted round to angle of left scapula. *Lungs.*—Few crepitations at the left base. *Urine.*—Acid. Large quantity of albumen; granular casts, but no blood. *Temperature.*—100·4° F. A mixture of Pulv. Jalap. Co. and Pulv. Scam. Co. āā, gr. v was given with a stimulant.

May 2nd.—A mixture of iron and digitalis was administered.

4th.—Œdema less. Albumen less. Marked crepitations at left base.

6th.—Temp. 101° F. Perspires a good deal; cough troublesome; some amount of dyspnœa. Was given another powder as above.

7th.—Breathing much relieved after action of powder, but tubular breathing and crepitation appeared at left base in the evening.

18th.—Marked tubular breathing at right base; only a trace of albumen present.

20th to 26th.—Temperature varies between 98·6° and 101° F. Dulness, loss of breath-sounds and voice-sounds at left base.

26th.—Triple sound to be heard over the sternum (? pericardial rub).

26th to June 6th.—Temperature never rose above 99·4°. Pulse very irregular. Good deal of dyspnœa; on the last day this had increased; pulse intermitting; the breathing became more and more laboured, and finally ceased.

Post-mortem examination.—Extensive pericarditis with universal adhesions save at the spot corresponding to where the friction sound was heard; a little fluid in left pleura; some fluid in abdominal cavity; kidneys congested; nutmeg liver. Heart hypertrophied; double mitral disease; tricuspid dilatation; no aortic disease.

William B—, æt. 3, was admitted July 4th, 1894, for drowsiness and feverishness. No history of rheumatic fever, scarlet fever, or diphtheria could be obtained. Was fairly well until July 1st, when he had a fall and struck the back of his head; after the blow he became drowsy, and on the following day had an attack of diarrhœa and vomiting, for which he was treated at University College Hospital. As he continued drowsy on the 3rd and the morning of the 4th, he was brought up to King's College Hospital.

On admission he was heavy, drowsy, and languid. Very anæmic and "puffy-looking." No ascites; no œdema. *Lungs.*—Rhonchi and sibili all over both lungs. *Heart-sounds.*—Second sound accentuated over aortic area. *Urine.*—Acid, large quantities of blood, albumen, and blood-casts. *Temperature.*—100·4° F.

July 5th, 2 a.m.—Temp. 104·2°. Passing very little urine. 10 a.m.—Temp. 101·2°; urine concentrated (smoky). Much blood and albumen. Diet ordered was milk and plenty of barley water; he was given a little jalap and scammony, which produced watery stools. 2 p.m.—Temp. 105°. Nothing but rhonchi over both lungs.

6th, 10 p.m.—Temp. 104·2°. Was given a hot pack, during which he perspired profusely.

7th, 10 a.m.—Temp. 102°. Less albumen in the urine. 12.30 p.m.—Temp. 105°. Hot pack.

8th, 10 a.m.—Temp. 101°. Albumen and blood much diminished, no casts; diarrhœa. 12 p.m.—Temp. 105°. Fine crepitation at base of right lung.

9th.—Temperature fell to 99°. Albumen and blood present in traces only.

12th.—Last three days temperature has been normal. No blood and slight albuminuria.

13th to 27th.—Temperature has varied from 99° in the morning to 101° at night. Coughed a good deal, but lung and heart sounds were normal. No albumen and no blood in urine, of which he passed a fair amount. Sick occasionally, and complains of headache. Bowels regular.

28th.—Temperature under 99°; was given some perchloride of iron and has steadily improved; the appetite returned, he regained some colour, and the cough ceased.

REPORT

OF

OPHTHALMIC DEPARTMENT.

By MALCOLM M. McHARDY, F.R.C.S.Edin.

As the work of the Ophthalmic Department here was unduly swelled and heavy prior to the rebuilding and during the time of the rebuilding of the Royal Eye Hospital at Southwark, when many of the patients of that institution found accommodation here, so since those model premises have been opened for in-patients, during 1892 and 1893, the pressure on the beds here has been markedly less, and our most earnest students of ophthalmology, after getting a preliminary training here, frequently take advantage of the rich field of important material which is always so conveniently available by crossing Waterloo Bridge. As one of the results, a mere summary record of the work here during 1893 would be misleading, and probably barren of special interest, save as regards the development and practice of the artificial maturation of immature senile cataract, concerning which the review already given (p. 73) may be found interesting, as tracing the evolution of the method in my practice. The method gains increasing favour in my eyes the more I see of its results at my hands. In May, 1890, I communicated my views of the proceeding as they had developed with five years' practice. The communication I then made has never been published. I may, therefore, reiterate much that I said in 1890. My subsequent experience entirely confirms me in the views I then supported.

At the recent meeting in Edinburgh of the International

Ophthalmological Congress I communicated a brief summary of some of my more recent experience with this method of ripening senile cataracts, and tabulated for comparison the results obtained at different stages of my experience with it. This abbreviated summary and the tables will appear in the volume of that Congress's 'Transactions,' but are included in the communication already mentioned, which will be the first comprehensive record published of my experience in the matter.

The total absence of septic infection after operations on the eyeball during the past year, and the almost total absence of such disaster in the department during the last ten years, would appear to satisfactorily demonstrate the efficiency of the antiseptic precautions habitually practised. These precautions are as follows.

Antiseptic precautions.—The slightest perceptible muco-purulent inflammation of the conjunctiva, or of the lachrymal sac, is remedied as far as possible before any operation on the globe is commenced. Likewise any in-turned misplaced eyelash is carefully searched for, and when found removed. Immediately prior to operating the upper and lower conjunctival cul-de-sacs are freely washed out with a sterile, saturated, aqueous solution of boracic acid. In doing this particular care is practised to ensure the lachrymal sac being thoroughly emptied by digital pressure over it, while observation is directed to the possible occurrence of any regurgitation through either caniculus; and, whether or no such regurgitation occur, the above-mentioned washing of the conjunctival surfaces is repeated. Furthermore the immediately adjacent skin, the cilia, and the lid edges are carefully examined and cleansed with the boracic solution. All instruments that will admit of boiling are systematically boiled for at least three minutes in distilled water immediately prior to use. The only instruments which will not admit of boiling are the tortoiseshell spoon and the tortoiseshell spatula, which are kept scrupulously clean, are sterilised in phenol solution after known exposure to any septic contamination, and are steeped in boracic lotion immediately prior to use.

All the instruments, prepared as above stated, that are likely to be required in any operation, are placed ready on a recently boiled unstarched linen cloth, one edge of which is folded back so as to cover the working ends of the instruments, and to screen these from dust during the brief interval which may elapse between their sterilisation and use.

For operations on the eyeball itself, otherwise than its removal, sponges are never used, but in their place conveniently shaped and proportioned pledgets of freshly boiled absorbent cotton wool, which have been wrung out in a recently boiled linen cloth by carbolised hands.

Eye dressings.—The dressing hitherto most usually adopted after operations on the eyeball has been a layer of boiled fine cambric, greased with boracic acid vaseline (ten grains to the ounce), rinsed through boracic acid solution, and laid over the gently closed eyelids. Upon such cambric is placed a layer of dry boracic absorbent cotton, and over this a sufficiency of dry absorbent cotton (preferably Brün's) to fill the hollow between the brow and nose. Then it has been the practice to apply a two-inch wide open elastic cotton roller over all in the ordinary manner. Recently, however, for certain cases (but I cannot yet determine for what proportion of all eye operation cases) I am trying the charmingly light, rigid, bean-shaped, concavo-convex aluminium shields, or shells, introduced and very largely used by Professor Snellen, of Utrecht. Such shields are applied without any bandage. The cotton-wool compress is first held in position by two or three strips of adhesive plaster, passing obliquely from the centre of the forehead downwards and outwards to the cheek-bone. The shield is then applied directly over the dressing, takes its bearing well wide of the bony margins of the orbit, and is secured in its position by three further strips of adhesive plaster applied as just mentioned. Further security can be given to the whole by tying across the shield and round the head an elastic knitted band, which may be white for ward use and black for out-of-door wear, but in either case washable and boilable without injury.

The three principal advantages of this just described arrangement of Professor Snellen's over its well-tried predecessor are—(1) That it obviates the possibility of a patient, while asleep, making injurious pressure upon a crippled eyeball by turning the head so as to bring the surface of the superimposed elastic compress against the pillow or against the hand. (2) That it can dispense with a firmly applied bandage, which is so often distressful to patients by reason of its tightness and warmth around the head. (3) That it admits of speedy removal and easy readjustment without any disturbance of the patient's head whenever an inspection of the eye is requisite.

An exceptionally large proportion of the in-patient accommodation has been allotted to the treatment of severe cases of ulcerative or suppurative keratitis. The experience gained with such cases has been peculiarly happy. It has demonstrated that scarcely any such cases are now beyond hope when there is available for their treatment good accommodation, with skilled and careful nursing, supplemented by intelligent watchfulness, discriminating local treatment, and an absence of ill-considered or perfunctory interference.

It is among my happiest experiences to note how each month I now see saved corneæ such as less than a quarter of a century ago I was accustomed to see condemned, and to watch go from bad to worse. The active agencies by which this has been effected are in-patient as against out-patient treatment, skilled as against amateur application of the compress and bandage, eserine in lieu of atropine as a local application for a vascular and certain special forms of ulcerative keratitis, hydrochlorate of quinine lotion as a local application in suppurative keratitis; the almost total abandonment of paracentesis for the evacuation of hypopion, and watchfulness to husband the patient's natural recuperative power to the utmost, with such tonics as may be specially indicated in each individual case, but most usually by quinine with or without arsenic or iron; and to be last mentioned, though of very substantial importance, by enjoining the patient's rigid confinement to bed while the ultimate usefulness of either cornea is jeopardised through idiopathic, non-syphilitic inflammation, or by the spread of ulceration from a septic injury suffered by one of low vitality.

REPORT

OF

AURAL DEPARTMENT.

(PROFESSOR URBAN PRITCHARD.)

By A. H. CHEATLE, F.R.C.S.,
CLINICAL ASSISTANT.

DURING the past year (October 1st, 1893, to September 30th, 1894) 332 out-patients have been treated.

External ear :	
Furunculosis	6
Cerumen	30
Foreign bodies	2
Cherry-stone	1
Fly	1
Middle ear :	
(1) Non-suppurative :	
(*a*) Acute	4
(*b*) Chronic, including sclerosis	55
With adenoids	30
With adenoids and hypertrophied tonsils	7
With nasal polypi	1
(2) Suppurative :	
(*a*) Acute	16
(*b*) Chronic	55
Tubercular	2
With adenoids	43
With adenoids and hypertrophied tonsils	9
With hypertrophied tonsils	1
With eczema	6
With furunculosis	2
With true hypertrophy of inferior turbinateds	1
With nasal polypi	1
With aural polypi	10
With necrosis of meatal wall	1
With mastoid disease	5
With secondary implication of internal ear	1
Internal ear :	
Due to fall	1
Syphilis :	
Congenital	2
Acquired	2
Parotitis	1
Influenza	1
Boiler-makers' deafness	1
Ménière's disease	9
Deaf-mutism	6
Nasal :	
Adhesions of inferior turbinateds to septum	1
Atrophic rhinitis	2
Hypertrophic rhinitis	6
Tonsillitis, acute	2
Pain in mastoid region due to carious teeth	4
Unimportant	6

CASES OF INTEREST.

CASE 1. *Nasal polypi causing deafness in a boy aged eleven years.*—A. Y—, male. History of having been deaf "off and on" for as long as the mother can remember; never any otorrhœa. The membranes both depressed and opaque, and exactly resembling the condition seen with post-nasal growths. Nasal polypi blocking both nostrils; no post-nasal growths. The hearing was greatly improved after removal of the polypi.

CASE 2. *Implication of internal ear during course of chronic middle ear suppuration; subsequent recovery.*—E. C—, æt. 16, F. History of having been deaf with the right ear since she had scarlet fever when seven years old. She then had acute earache, discharge, and facial paralysis; deaf with the left about three or four months, with free discharge, having had, fourteen days previously to the visit, an attack of pain in the left ear with great giddiness and vomiting, but none since.

On examination; *right,* facial paralysis, evidence of old suppuration, quiescent. *Left,* free discharge, pus pulsating.

$$\text{Watch, 10 feet } \frac{\text{R.O.}}{\text{L. pressure}} \quad \text{Bag } \frac{\text{O}}{\text{Touch}}$$

T.F. on nose O (Gardiner-Brown's test) and referred to left.
Right mastoid, 3 sec. – ,, ,,
Left mastoid, 1½ sec. + ,, ,,
Therefore internal (old) on the right side.
Middle ear suppuration on the left side.

At her next visit she complained of extreme deafness with the left ear, with attacks of giddiness and vomiting, voice not heard on shouting.

$$\text{W. } \frac{\text{R.O.}}{\text{L.O.}} \quad \text{T.F.—3 secs. on both sides,}$$

clearly showing implication of the left internal ear.

A small polypus was seen coming through a perforation behind the handle of the malleus in the neighbourhood of the stapes and incus joint. Temp. 99°.

Before admission into the hospital she had free blistering behind the ear with no result. When in the hospital a curved incision two inches in length, and half an inch behind the attachment of the auricle, right down to the bone, was made; the posterior auricular artery being divided and allowed to bleed freely before applying pressure; the polypus was snared.

No improvement in hearing noticed while in the hospital, shouting not heard, communication having to be carried on by means of a slate; but while attending as an out-patient the hearing returned, so that at the end of a month from her discharge all internal ear symptoms on the left side had cleared up, conversation heard perfectly, and the membrana tympani had completely healed.

In-patients, 31.

Adenoids	12
Adenoids with hypertrophied tonsils	1
Aural polypus	2
Panotitis	1
Mastoid abscess	9
Œdematous mastoiditis	2
Ménière	1
Tonsillitis	1
Spur in nose	1
True hypertrophy of inferior turbinated	1

In each of the mastoid cases the antrum was opened and thoroughly cleaned out, the wound being allowed to heal from the bottom; recovery taking place in each case, except in the tubercular one reported below.

Case 1. M. C—, æt. 3 months, female, Twining Ward. Had had a purulent, offensive discharge from the right ear since birth; about a month before admission an abscess formed in the neck, which was opened by a doctor, and had continued to discharge ever since. A few weeks before admission swelling appeared behind and below the auricle.

On admission the child was in a very poor condition, markedly rachitic; slight swelling behind and below the right auricle, most marked in the region of the top of the mastoid process, no fluctuation; an offensive dark-coloured discharge from the ear, with swelling of the meatal walls, especially the posterior, preventing examination of the membrane. Under chloroform an incision close to the auricle was made, extending from the top of the attachment of the auricle downwards to the top of the mastoid process, the periosteum detached, and the outer wall of the antrum and the mastoid process, which were found to be in a carious condition, thoroughly scraped away with a sharp spoon. The gland in the neck, which had suppurated, was also thoroughly scraped. After the operation the child improved slightly; but it was soon noticed that healing was not taking place, and that the caries was extending; the temperature rising every night and falling in the morning. The dura mater became exposed above the antrum; facial paralysis and twitchings of the left arm and leg supervened; the child was placed under chloroform again, all carious bone thoroughly scraped away with a sharp spoon, exposing the dura mata of the middle fossa, immediately above the petrous portion of the temporal bone, for a space one inch in length and half an inch in breadth; the exposed membrane seen to be granular and thickened. No improvement took place after the operation, no attempt being made at healing. The twitchings of the left arm and leg increased in intensity, with marked rigidity between the attacks. The temperature rose, the child finally dying in an insensible condition.

Post-mortem report.—Lungs: two or three caseous nodules, somewhat pyramidal in shape, scattered through, each surrounded by a few miliary tubercles and broncho-pneumonia. Mesenteric glands large and cheesy. Small intestines, some typical tubercular ulcers.

Brain.—Left hemisphere: a caseous mass, the size of a small chestnut, situated at the middle of the fissure of Rolando, pressing into the ascending parietal convolution to a considerable extent, and slightly into the ascending frontal. Right hemisphere: a mass exactly corresponding to that on the other side, a smaller one on the parietal lobule close to the great longitudinal fissure, and another softening mass the size of a walnut, occupying the whole of the optic thalamus, only a thin capsule of brain-tissue remaining.

Dura mater, where it had been exposed by operation, thickened and granular on its outer surface, the inner perfectly smooth; no general meningitis. Microscopical sections of affected dura mater showed subacute inflammation with tubercles. Temporal bone, caries found extending all round site of operation, middle ear completely carious; no trace of ossicles, membrane, or muscles; the aqueductus Fallopii opened for one eighth of an inch immediately above fenestra ovalis, the nerve practically destroyed at this point, the disease extending into the vestibule of the internal ear. Numerous minute perforations in carotid canal and through floor into jugular fossa. Fenestræ irregularly enlarged and filled up with cheesy material. Groove for lateral sinus carious, but no change in wall of sinus, which contained a healthy clot.

. . .

Two cases of œdematous mastoiditis during acute otitis.

Case 2.—G. L—, æt. 27, male, Cheere Ward. A month before admission had an attack of influenza with "bronchial catarrh and sore throat." In the second night of the illness woke up with a dull aching pain in the right ear, which quickly increased in severity with great deafness. Poultices were applied to the ear, which relieved the pain somewhat, but more or less aching continued for fourteen days. Six days before admission the pain increased during a train journey, and a swelling appeared close behind the auricle at the upper part, which gradually spread downwards into the neck and upwards and backwards over the head, the pain rendering sleep impossible for five nights. No discharge noticed by patient. On admission the patient looked pale and ill; tongue furred; temperature 100⅗°. A large œdematous swelling behind the right auricle extending into the neck, and over side and back of the head, the finger on pressure sinking in for quite an inch; no definite fluctuation; an enlarged gland could be felt immediately below the auricle, the whole extremely tender.

On examining the meatus the posterior and superior walls were markedly bulged. The membrane showed signs of inflammation; the vessels in region of Shrapnell's membrane and along the handle of the malleus very congested; some viscid secretion seen through the membrane lying in the middle ear, but no bulging or perforation. Watch 10 feet, heard on contact.

Under $CHCl_3$ a curved incision was made extending from the top of the auricle well down into the neck swelling, about half an inch behind the attachment of the auricle, the periosteum divided, but no pus found; the bone healthy. After the operation the temperature became normal, the pain much less, the patient sleeping soundly. During the course of the next fortnight the pain and swelling completely disappeared, the wound healed, the hearing returned with daily inflations and all signs of inflammation of the middle ear resolved.

Case 3.—T. H—, æt. 15 years, Craven Ward. Admitted with exactly similar condition except that the ear was discharging profusely; an incision, similar to the one made in the previous case, brought down the temperature, relieved the pain, the œdema gradually disappearing from the head and mastoid region; the gland below the auricle suppurated later, necessitating incision and draining. Complete recovery took place, the wounds healed, the middle ear suppuration ceased, and hearing returned.

REPORT

OF

DENTAL DEPARTMENT.

BY ARTHUR S. UNDERWOOD.

THE work of the past year may, I think, be looked upon as satisfactory. Considerable changes have been effected which involved not a little initial expense, but have more than doubled the efficiency of the dental work done. The first of these was the purchase of a dental engine. This has enabled the dental surgeon to properly prepare cavities, and to teach the senior students the general rules of simple conservative dentistry. Another purpose is served by the engine, which may be touched upon in the report of aural surgery, namely, the drilling through with special burrs of ivory exostoses of the external ear. It may be mentioned in this connection that a special guard has been devised by Professor Urban Pritchard and myself to protect the mucous membrane of the meatus from chance movements of the burr, thereby greatly diminishing the bleeding, and consequently simplifying the operation. The engine also saves so much time in the preparation of cavities that many more cases can be attended to.

Another great reform has been achieved by the introduction of the administration of nitrous oxide gas and of systematic teaching by Dr. Silk and Mr. Rowell in the methods of procuring the brief anæsthesia required for most dental operations. Mr. Rowell attends as far as is possible every Tuesday, and on these days all the patients requiring anæsthetics are treated. Mr. Rowell allows each dresser to administer nitrous oxide under his guidance, and in this way a thorough practical knowledge of this branch of surgery may be gained by the dressers, the value of which in after years, especially should they be practising in the country, it would be difficult to over-estimate.

A local anæsthetic has been largely used in this department during the past eighteen months with very good results; I allude to a preparation of chloride of ethyl supplied by Messrs. Ash in glass bottles, each containing about two ounces of fluid. The mode of its application is as follows. The mucous membrane covering the roots of the tooth to be extracted is first dried with a napkin, the stopper of the bottle is removed, and through the very minute orifice in its little metal end a thin stream of chloride of ethyl is projected against the dried surface. This stream issues with a good force as soon as the bottle is warmed by the hand, and continues to issue so long as the nozzle is kept lower than the rest of the bottle. After a variable time, 5, 10, or even 30 seconds, the gum becomes suddenly white (as though touched with pure carbolic), and this occurs more rapidly if the bottle be held far away from the gum, about eighteen inches or so. At this stage a tooth can be extracted with very little pain; I do not think it would be true to say absolutely none, but so little that if the extraction is rapid patients invariably make very light of it. It might be possible that this spray might be of service in some other forms of minor surgery.

In the domain of mechanical appliances much has been done from time to time, and one or two cases are at present undergoing treatment, the results of which may appear in a future report. Obturators have been made with a view to removing the defective utterance of cleft palate cases where the surgical operation has not procured a complete closure of the aperture. I am myself a little sceptical as to the results of this treatment among the poor; so much depends upon an effort to remedy the faulty speech on the part of the patient, an effort that is seldom made except in very young cases.

The drainage of chronic antral cases by means of a tube attached to an artificial denture, and provided with a moveable shutter at its buccal orifice, has also been attempted from time to time, generally with good results. A case is at present in contemplation of which I may have more to say in a future report.

One denture was made for a case which, as far as I know, is somewhat rare. The patient was a porter at the docks, aged about sixty, and his trouble was that he had lost all his upper teeth and none of his lower ones, with the result that his lower row bit into his unprotected upper gums, producing painful sores and indirectly injuring his general health. An upper vulcanite case was made, which enabled him to eat in comparative comfort. One interesting complication of this case was that the patient was a very alcoholic subject, and that the presence of any foreign body near his palate brought on violent retching. We overcame this for the time required for model-taking by cocaine lozenges; and habit, or it may be (let us hope so) the modification of other habits, accustomed him in time to the denture.

One other feature of this department is the attendance of naval surgeons, who under the new regulations are encouraged to take out a course of dental surgery at some recognised school; in this direction the department has already done much good work. The kind of teaching attempted is in a general way that which is most likely to prove serviceable to country surgeons and army and navy men—simple methods of dealing with pain and restoring masticatory power where the more elaborate operations and treatment of modern dentistry are inaccessible. It must be an every-day experience with those who practise in remote places to be called upon to alleviate pain and keep things going until the most approved dental aid be forthcoming; and the young surgeon who learns this will not, I think, have wasted his mornings in the out-patient room.

REPORT

OF

PATHOLOGICAL DEPARTMENT.

By NORMAN DALTON, M.D.,

ANALYSIS OF POST-MORTEM EXAMINATIONS PERFORMED FROM OCTOBER 1st, 1893, TO SEPTEMBER 30th, 1894.

N.B.—*This analysis refers exclusively to post-mortems performed during the year. The results, therefore, will not tally with the clinical reports which deal with cases admitted during the year, as cases admitted last year have died during this year.*

Total number of post-mortems = 167.

N.B.—Unfortunately in many interesting cases a post-mortem examination was refused.

Specific and General Diseases.

Typhoid fever.—Six cases.

In one case septic endocarditis was present (*vide* Diseases of the Heart).

In one case there was perforation and peritonitis. In none was there peritonitis without perforation.

In four cases there were ulcers in the large intestine as well as the small.

In one case the lesions were not characteristic. P.M. Book v, p. 26.—A man æt. 29. Dr. Beale. The small intestine was extensively ulcerated, but the ulcers were not typical in shape or position, and the wall of the intestine was thickened. The mesenteric glands were large, and had a thick fibrous capsule like old cheesy glands. The gland substance was soft and worm-eaten, and in colour a mixture of yellow and purple ; a purple fluid had in most glands collected between the gland substance and the capsule.

Microscopically, Peyer's patches and the submucous tissue were infiltrated with necrotic small round cells, and the mesenteric glands consisted of a mass of fibrin. Neither tubercular nor typhoid bacilli were found in the glands.

Diphtheria.—Twelve cases.

In seven cases there was membrane on both the fauces and larynx, in one on the fauces only, and in three on the larynx only. In one case death occurred on the thirty-fifth day, and the membrane had disappeared.

In ten cases *lobular pneumonia* was found.

In one case *spinal myelitis.* Death occurred on the thirty-fifth day (*vide* Diseases of the Cord).

In one case *gastric membrane.* P.M. Book v, p. 49. A boy æt. 1$\frac{4}{12}$ years. Dr. Yeo. The fauces, pharynx, and larynx showed thick tough membrane, and the trachea was full of soft membrane. The œsophagus was quite free, but the left half of the mucous membrane of the stomach showed distinct diphtheritic membrane. Microscopically this consisted almost exclusively of strands of fibrin with leucocytes entangled, but here and there there was some coagulation necrosis of epithelium. The membrane was rather superficial, *i. e.* the lower half of the tubular glands had not coagulated, and was free of fibrin. Between the tubes there was, however, some exudation of round cells, but the submucous connective tissue was comparatively free, even of leucocytes. Only a few diphtheritic bacilli were found, and they were rather superficially distributed.

In one case there were small hæmorrhages throughout the *kidneys.* Otherwise there were no naked-eye changes in the kidneys.

Whooping-cough.—One doubtful case, brought in dead, and said to have whooped. Nothing noteworthy was found.

Syphilis (*congenital*).—Four cases were attributed to this disease. Two, æt. 7 weeks and 4 months respectively, were brought into the hospital after death. In both there were ulcers on the buttocks. In the elder there was thickening of the meninges and undue adhesion of the velum interpositum to the corpora quadrigemina. In other respects nothing noteworthy was found.

The third case, æt. 5 weeks, showed simply enteric catarrh. During life there were signs of syphilis.

The fourth case, æt. 2 years, died of broncho-pneumonia, but showed Parrot's nodes and a slight amount of craniotabes.

SYPHILIS (*acquired*).—There were two cases recorded as such, but, of course, certain lesions in other cases may have been syphilitic.

CASE 1. P.M. Book v, p. 2.—A man æt. 59. Mr. Barrow. There was an enormous abscess with half-caseous contents, extending from above the clavicle to below the nipple.

CASE 2. P.M. Book v, p. 88.—A man æt. 53. Dr. Beale. There was the scar of an old chancre on the penis. *Heart :* hypertrophy of ventricles, no valvular disease, but several opaque white patches (size up to sixpenny piece) on other parts of the endocardium. Both *pleuræ* obliterated by adhesions. Over the back of the upper lobe of the left lung the pleura was very thick, and formed a triangular scar which dipped into the lung. Near this scar were two or three dilated bronchi. *General chronic peritonitis,* with a puckered omentum, a shortened mesentery, many adhesions, and a thickened capsule of both spleen and liver. *Liver* cirrhotic. *Spleen* large. *Kidneys* small and granular. *Stomach* enormously distended by masses of undigested food, particularly oranges, and coated with mucus in great excess. Death occurred suddenly, and was attributed to syncope from this distension. *Cerebral arteries* atheromatous. This case may be regarded as one of universal fibrosis.

TUBERCULOSIS.—There were 33 cases in which tubercles were found in the body among the 167 post-mortems performed during the year. In 26 cases tuberculosis was the cause of death. In 2 cases death was due to or accelerated by pyelitis, and in 1 by septic endocarditis. In the other 4 cases tuberculosis was of minor importance. There were 6 cases in which the tuberculosis might be described as general, miliary and acute.

SEPTICO-PYÆMIA.—It is, of course, impossible to exclude the influence of septic organisms, but 18 cases may fairly be classed as pyæmic. Of these 6 were cases of ulcerative endocarditis, 3 of septic kidney with bladder affection, 3 of abscess of the liver (exclusive of the case in which there was septic kidney with liver abscesses), 2 of otitis, necrosis of the temporal bone and general infection, 2 of meningitis (both probably traumatic), one of gangrene of the lung following a wound in the leg, and one after operation for varicose veins (P.M. Book v, p. 155).

GOUT.—Two cases.

CASE 1. P.M. Book iv, p. 417.—There was urate of soda in the right great toe. The aorta was highly atheromatous, and the aortic valves were calcareous. The kidneys were not affected.

CASE 2. P.M. Book v, p. 148.—A man æt. 43. Dr. Beale. Urate of soda was present in large quantity in the right toe and incrusted the cartilage of the right knee, and there were tophi in the ears. The *kidney* was granular and lardaceous, and the pyramids were streaked with urate of soda (*vide* Kidney Diseases). The *liver* was cirrhotic with perihepatitis. There were also gall-stones (*vide* Liver). The *spleen* was large and fibrous, but not pigmented (he had had malaria). Chronic *peritonitis*. *Heart* normal.

DIABETES.—There was no case of diabetes, but in one case of granular kidney and cerebral hæmorrhage there was glycosuria. The pancreas was congested and fatty.

ANÆMIA.—Two cases. One case was associated with phthisis, and one with tumours in the spleen (*vide* Spleen).

DISEASES OF THE LARYNX, LUNGS, AND PLEURA.

Larynx.

Simple laryngitis.—Four cases.

Diphtheritic laryngitis.—Eleven cases (*vide* Diphtheria).

Tubercular ulceration.—In one case of phthisis there was deep ulceration of the right ary-epiglottidean fold, and small ulcers over the whole of the larynx except the true cords. The epiglottis was thickened by small tubercles. On the surface of the greater part of the larynx there was a definite false membrane, which was only lightly adherent. Microscopically the membrane consisted of fibrin and epithelium which had undergone coagulation necrosis. Beneath the membrane typical tubercles were seen.

Peri-laryngeal abscess.—One case (*vide* Septic Endocarditis).

Bronchi and Lungs.

Simple bronchitis.—Nine cases.

Bronchiectasis.—Thirteen cases; 11 occurred in cases of phthisis (q. v.). The twelfth case was one of sarcoma of the lung. For the thirteenth case *vide* Acquired Syphilis, Case 2.

Lobular pneumonia: (*a*) *Catarrhal.*—Seventeen cases. They were all children with one exception, that of a man æt. 33, who had a history of alcoholism and early cirrhosis of the liver.

(*b*) *Diphtheritic.*—Ten cases.

(*c*) *Simple lobular pneumonia in cardiac cases.*—Four cases.

Ordinary *emphysema* was not always noted, but in five cases it was exceptionally marked.

Croupous pneumonia.—Four cases; 1 was apical and 3 basic. In 2 the liver was fatty and slightly cirrhotic, and in 1 of these there was chronic nephritis.

Gangrene of the lung.—Five cases. All were infarctions (q. v.).

Infarctions.—Fifteen cases: (*a*) *Non-suppurating.*—Ten cases; six occurred in cardiac disease, but in no case was the endocarditis septic. The other four cases of non-suppurating infarctions occurred respectively in (1) typhoid fever; (2) perforation of vermiform appendix; (3) pyonephrosis; (4) septic meningitis. In all suppuration would probably have soon occurred.

(*b*) *Suppurating infarction.*—One case (*vide* Diseases of Heart).

(*c*) *Gangrenous suppurating infarction.*—Five cases, due respectively to (1) mitral and tricuspid stenosis (not ulcerative); (2) perforation of right ventricle by a needle (*vide* Heart); (3) necrosis of temporal bone from otitis; (4) pyæmia after operation; (5) abscess in leg.

Tumour of the lung.—Five cases; three were cases of small cancerous nodules secondary respectively to cancer of (1) the œsophagus; (2) the gall-bladder; (3) the kidney.

The fourth case was also cancerous, and probably began in the pleura (*vide* Pleura). The fifth case was one of a large sarcoma (spindle-celled). There had been a fracture of the leg (*vide* Mr. Cheyne's reports, p. 213).

Miliary tuberculosis.—Seven cases.

Phthisis, i. e. *tubercular pneumonia, subacute or chronic.*—Twenty-three cases. In all there were well-marked lesions in both lungs. In eleven cases there were *bronchiectases* (with or without the ordinary tubercular cavities). In one case there was *laryngeal* phthisis with false membrane (*vide* Larynx), and in one marked laryngitis without tubercle. In 2 cases there was *empyema;* and in 1 of these the pus was inspissated. In another case there was *pyopneumothorax,* the ruptured cavity being at the base of the lung; while the upper part of the pleura was obliterated by adhesions. There were *intestinal* ulcers in 6 cases. In 1 of these the ulcer was in the appendix vermiformis, and had ruptured. In 4 cases there were tubercles in the kidney. In 1 of these (reported with Diseases of the Kidney) the kidney lesion was probably as old as that in the lung. In two cases there were tubercles in the spleen. In none of the cases was lardaceous disease observed macroscopically. One case deserves special reference.

Case. *Phthisis and mediastinal sarcoma* (P.M. Book v, p. 151).—A man æt. 42. Dr. Yeo. Emaciation not marked. At the root of the left lung there was a lobulated soft mass which extended into the lung on one side and perforated the pericardium on the other. Microscopically this mass was spindle-celled sarcoma. In addition there were large caseous masses in the upper lobe of the left lung, and these were distinctly tubercular on microscopical examination.

Pleura.

Empyema.—Six cases; 2 cases occurred in phthisis. In the third there was a gastric ulcer and an abscess in the liver (*vide* Abscess of Liver, Case 3). In the fourth there was chronic endocarditis, and the empyema was of very old standing. In the fifth and sixth there was general pyæmia due to ear disease and septic endocarditis respectively. In both of these there were infarctions in the lungs.

Pyopneumothorax.—Two cases. One due to bursting of a phthisical cavity (P.M. Book v, p. 77), and one to the bursting of an abscess in the lung (*vide* Septic Endocarditis, Case 5).

Cancer of the pleura.—Five cases. One followed cancer of the sigmoid; one, cancer of the kidney; one, cancer of the gall-bladder and peritoneum, and one, cancer of the peritoneum. The fifth case is as follows:

P.M. Book v., p. 82.—A man æt. 25. Dr. Beale. The right half of the thorax was a solid mass of cancer (with softening foci) extending from the second to the twelfth rib. The diaphragm was replaced by growth, and the liver pushed down, adherent to the growth, but not really involved in it. The growth was universally adherent to the chest wall. The upper lobe of the right lung was clear of the growth, and pushed up, and œdematous. The lower lobe could be made out, and was quite collapsed.

DISEASES OF THE PERICARDIUM, HEART, AND ARTERIES.

Pericardium.

Acute pericarditis.—Ten cases. In two kidney disease was present. In two there was old endocarditis. One was due to perforation of the pericardium by a needle (*vide* Heart). One was due to pyæmia following ear disease. One was associated with abscess of the lung (*vide* Heart), and one with sarcoma of the lung. One was associated with splenic leucocythæmia. The tenth case was that of a girl æt. 6, under Dr. Hayes (P.M. Book v, p. 123). Except a little pneumonia, the pericardium was the only part affected, and the inflammation was of some age, as granulation tissue was invading the fibrin in a thick layer, while the scanty serum which remained was blood-stained. The effusion was also blood-stained in the cases of sarcoma and of leucocythæmia, and in one case of endocarditis.

Adherent pericardium.—Seven cases. In four there was also endocarditis. In the other cases death was due respectively to (1) cancer of the stomach; (2) granular kidney and cerebral embolism; (3) phthisis and pyelitis. In four cases the adhesion was light, although universal, and the heart muscle was not invaded by fibrous tissue to any extent. In three cases there was much fibrous thickening and a good deal of invasion of the heart muscle, and in two of these there was a fair amount of mediastinal fibrosis.

It will be seen that out of the seventeen cases of pericardial affection six were associated with endocarditis.

Tumours of the pericardium.—Two cases. In one there was a sarcoma of the lung with a few nodules on the pericardium and hæmorrhagic pericarditis (*vide* Mr. Cheyne's reports, p. 213). In the other a mediastinal sarcoma had invaded and perforated the pericardium (*vide* Diseases of the Lung). There was no general pericarditis in this case.

Heart.

Endocarditis.—Twenty-three cases. In 18 of these the heart disease was the cause of death. In 1 case there was both septic endocarditis and typhoid fever, death being due to perforation. In 3 cases old endocarditis was found after death from (1) phthisis, (2) perforation of the vermiform appendix, (3) gangrene of lung following abscess in the leg, respectively. In the twenty-third case the endocarditis was represented merely by white patches on the endocardium apart from the valves. For this case *vide* Syphilis.

Septic endocarditis.—Six of the twenty-three cases were septic, including the case due to perforation of the heart by a needle. Five of these are worth recording.

Case 1. P.M. Book v, p. 94.—A woman æt. 23. Dr. Yeo. *Heart.*—Large, softening vegetations on the aortic valves, with much destruction of valve tissue. One globular thrombus lay, practically unattached, between the tricuspid valve and the septum ventriculorum. It was about the size of a large currant, smooth on the outside and apparently firm, but when cut into, it was found to contain a thick, opaque, lilac-coloured fluid. There was also a rounded vegetation, the size of a split pea, on the auricular surface of the tricuspid valve. The left *pleura* was the seat of two empyemas, one at the base and one at the apex. The two cavities were separated completely by a broad band of adhesion. The *spleen* contained two or three soft infarctions with peritonitis over each.

There was an abscess containing about two ounces of thick pus, around the whole of the front of the larynx, but not extending behind it, and not perforating the larynx, pharynx, or fauces. The front of the thyroid cartilage was bare; the interior of the larynx simply inflamed.

Case 2. *Septic endocarditis and miliary tuberculosis* (P.M. Book v, p. 111).—A girl æt. 1 year. Mr. Cheyne. There were sores on the left trochanter and round the nose; none around the anus. The glands beneath the sterno-mastoid were suppurating. There were miliary tubercles in the lungs (some of these were suppurating), spleen, and peritoneum. *Heart.*—On the mitral valve there was a softening yellow vegetation, the size of a currant, and very loosely attached. A thrombus, also softening and about the size of a marble, was attached to the apex of the ventricle.

Case 3. *Septic endocarditis and typhoid fever* (P.M. Book v, p. 5).—A woman æt. 24. Dr. Duffin. There were the usual appearances of typhoid fever with perforation and peritonitis. *Heart.*—Valves normal, but numerous small rounded thrombi projected from the surface of the endocardium in a polypoid manner. No one of them was larger than a currant, and none were quite unattached nor quite diffluent on section. There were infarctions in the spleen and kidneys.

Case 4. *Endocarditis with abscess of the lung and pyopneumothorax* (P.M. Book v, p. 33).—A man æt. 39. Dr. Duffin. At the anterior part of the lower edge of the left lung there was a small abscess, the shape of an infarction. It had burst into the pleura, which contained much pus and a little air. *Heart.*—In the right ventricle there were numerous millet-seed thrombi, quite round and unattached. They lay in the recesses of the heart muscle, and were quite distinct from the rest of the clot in the ventricle.

Case 5. *Perforation of the heart by a needle* (P.M. Book v, p. 64).—A man æt. 27. Dr. Curnow. There was pericarditis with a dirty-looking exudation. A needle one and a quarter inches long, intact (including the eye) but rusted, was found caught in one of the cusps of the tricuspid valve. It did not transfix the valve. The clot in the right ventricle was gangrenous-smelling, grey and soft in parts (especially near the tricuspid valve). The rest of the heart was normal. On further inspection the point at which the needle entered the heart was found in the pericardium over the back of the right ventricle, but no needle-track could be found in the parietal pericardium, mediastinum, or œsophagus. There was intense pharyngitis, but no perforation was visible there. There were several gangrenous infarctions in the lungs.

Valvular disease of the heart.—Twenty cases; 19 of these were due to endocarditis. In the twentieth (P.M. Book v, p. 109) the aortic orifice was so dilated, in consequence of dilatation of the aorta from endarteritis, as to be incompetent; but the cusps were normal, and there was no endocarditis.

Disease of the aortic valve.—Fifteen cases. In 7 of these the mitral valve was affected as well, but in 2 of the 7 the mitral orifice was merely dilated. In all the 15 cases except the one which was not due to endocarditis there was both stenosis and regurgitation.

Disease of mitral valve.—Twelve cases.

Mitral stenosis.—Seven cases. In 3 of these there was tricuspid stenosis as well. In 4 of the 7 cases the orifice was button-hole.

Mitral regurgitation.—Five cases. Two of these were due to dilatation of the left ventricle from aortic regurgitation, in 2 there were septic vegetations on the valves, and in 1 the non-closure of the valve was due to rigidity of the curtains and shortening of the chordæ.

Tricuspid stenosis.—Three cases. In all there was mitral stenosis as well.

Tricuspid regurgitation.—The orifice was dilated in many cases, but it was difficult to say that the valves could not close it. In two cases there were septic thrombi on the valve (*vide* Septic Endocarditis, Cases 1 and 5).

Infarctions with heart disease.—Eleven cases. *In the brain.*—One case; not septic. *In the lungs.*—Eight cases. In two there was septic endocarditis on the right side of the heart (*vide* Septic Endocarditis, Cases 4 and 5). *In the spleen.*—Three cases, all septic endocarditis. *In the kidney.*—Two cases, both septic endocarditis.

Fatty heart (apart from valvular disease).—Three cases; one in cancer of the liver, one in splenic anæmia, and one in anæmia with phthisis.

Arteries.

Aneurism.—Six cases, all in men. There were two large sacculated aneurisms of the thoracic aorta: one of these sprang from the front of the middle of the arch, and eventually perforated the sternum (*vide* Clinical Reports, and P.M. Book v, p. 96); the other was in the descending aorta, and perforated the œsophagus (P.M. Book v, p. 98). In the third case there was a fusiform dilatation of the whole aortic arch. There was also disease of the aortic valves and phthisis (P.M. Book v, p. 51). In the fourth and fifth cases there was merely a small but definite bulge on the right side of the ascending arch, just above the valves. In the sixth case the aneurism sprang from the lower part of the abdominal aorta. It compressed the right kidney (P.M. Book v, p. 3).

DISEASES OF THE ALIMENTARY CANAL AND PERITONEUM.

Œsophagus.

Cancer of œsophagus.—One case. The growth was opposite the bifurcation of the trachea (P.M. Book iv, p. 410).

Perforation of the œsophagus.—In one case an aneurism burst into the œsophagus (*vide* Aneurisms).

Stomach.

Diphtheritic gastritis with membrane.—One case (*vide* Diphtheria).

Ulcer of the stomach.—Five cases. Two were cancerous (*vide* p. 312). A third case had apparently perforated and caused an abscess in the liver (*vide* Case 3, Abscess of liver). In the fourth case there was no ulcer present, but a fibrous band encircled the middle of the stomach, causing slight hour-glass contraction, and the mucous membrane over the band looked at one point as if it was scarred. This case was one of heart disease (P.M. Book v, p. 71). The fifth case was as follows: P.M. Book v. p. 129.—A woman æt. 29. Dr. Yeo and Mr. Rose. Stricture of pylorus from ulceration. The *stomach* was hypertrophied, not dilated. Along the lesser curvature there were two scars in the mucous membrane. The pylorus was surrounded by peritoneal adhesions in which the gall-bladder was involved. The pyloric orifice was extremely narrowed, and its edges hard and unyielding from the presence of scar tissue. At the posterior and upper part of the pylorus there appeared to be a chronic ulcer, but the opening made at the operation was situated just at this place. There was no appearance of cancer. No recent peritonitis.

Cancer of the stomach.—Two cases, both affecting the middle of the organ.

Case 1. P.M. Book v, p. 44.—A woman æt. 69. Dr. Duffin. The *stomach* was contracted to about the size and shape of a large banana, with, however, slight pouching at the fundus. The pylorus was dragged to the left, and lay in the middle line of the body. The wall of the stomach was universally thickened, but especially over the middle third. The whole of the mucous membrane looked raw. At about the middle of the anterior wall and close to the greater curvature there was an oval projection from the inner wall, about the size of an egg. The top of this projection was deeply ulcerated, and the edges, when cut into, showed malignant growth covered by mucous membrane. The retro-peritoneal glands were enlarged. There was also a cholecyst with gall-stone (*vide* Diseases of the Liver).

Case 2. P.M. Book v, p. 125.—A woman æt. 29. Dr. Yeo. There was extensive cancer of the peritoneum in which the stomach was involved; but there was also a small malignant ulcer of the stomach at the middle of the fundus.

Stricture of the pylorus.—Two cases. One due to gastric ulcer is described above. In the other the obstruction was slight and due to cancer in the portal fissure (*vide* Diseases of the Liver). In both the stomach was hypertrophied rather than dilated.

Intestines.

Ulcer of duodenum.—Two cases. One resulted from the presence of a cancer of the pancreas, and one followed a scald.

Duodenal fistula.—Two cases, both due to gall-stones (*vide* Liver).

Tubercular ulcers.—Eight cases; 6 were cases of phthisis and 2 of general tuberculosis. In one case there was an ulcer of the appendix vermiformis.

Miliary tubercles without ulceration.—Two cases, both of general tuberculosis.

Typhoid ulceration.—Five cases, in 4 of which the colon was also ulcerated (*vide* Typhoid Fever).

Cancer of small intestine.—One case. In one case of cancer of the sigmoid there was a small independent growth in the small intestine (*vide* Cancer of Sigmoid).

Persistent Meckel's diverticulum was found in one case. Death was due to syphilitic marasmus.

Intestinal obstruction.—Three cases. In 2 the small intestine was obstructed; in one by a gall-stone, and in one by the strangulation of a hernia leading to gangrene of the bowel. For both these cases *vide* the Surgical Reports. In the third case the sigmoid flexure was strictured by cancer (*vide* Sigmoid).

Inguinal hernia.—One case, which has just been mentioned (intestinal obstruction).

Diaphragmatic hernia was found in a case of phthisis in a man æt. 35 (P.M. Book v, p. 76). The specimen is described in the Museum Report.

Appendix vermiformis, perforating ulcer of.—Two cases.

Case 1. P.M. Book v, p. 84.—A man æt. 43. Dr. Yeo. The patient had disease of the aortic valves. There was purulent peritonitis, especially over the cæcum, the interior of which was inflamed. There was an ulcer encircling the middle of the appendix and narrowing it. On either side of the ulcer the appendix admitted the passage of a No. 4 catheter. There was a small perforation in the floor of the ulcer. No foreign bodies were found, and the ulcer was not tubercular, and there were no ulcers elsewhere.

Case 2. P.M. Book v, p. 90.—A man æt. 34. Dr. Beale. The case was one of phthisis with tubercular ulcers of both large and small intestine. There was an ulcer in the appendix, which had perforated and caused a fæcal abscess in the iliac fossa, but no peritonitis.

Appendix vermiformis, suppuration within.—One case, due to a pin (*vide* Abscess of Liver, Case 4).

Acute colitis.—One case (P.M. Book v, p. 108).—A girl æt. 3. Dr. Hayes. The whole of the large intestine, but especially the sigmoid, was much thickened. The mucous membrane was swollen, very red in patches, abraded in patches and soft. There was only slight catarrh of the small gut, and the stomach and other organs were normal.

Cancer of the sigmoid flexure.—One case (P.M. Book v, p. 154).—A woman æt. 35. Dr. Duffin. The pleuræ and the whole of the peritoneum showed plaques of cancer. The *colon* was enormously distended by fæces, and the transverse portion was bent so that it reached nearly to the pubes. About four inches of the sigmoid was occupied by an annular ulcerated growth which constricted the lumen. Right lumbar colotomy had been performed. In the middle of the *jejunum* there was a sessile projecting nodule, the size of a large cherry, and ulcerated at the top. Both *ovaries* were enlarged by nodular growths. The growths in the sigmoid proved microscopically to be scirrhous.

Cancer of the rectum.—Two cases.

Case 1. P.M. Book iv, p. 411.—Colotomy was performed. There was acute peritonitis.

Case 2. P.M. Book v, p. 130.—Cancer of rectum and liver (*vide* p. 244).

Perforation of the intestine.—Three cases; one was a case of typhoid, and two were perforating ulcers of the appendix vermiformis.

Foreign bodies.—There were two deaths due to swallowing foreign bodies. One was that of appendicitis due to a pin (*vide* Abscess of Liver, Case 4). The other was a case in which a needle was found in the right ventricle (*vide* Diseases of the Heart).

Peritoneum.

Acute peritonitis.—Seven cases, due respectively to (1) colotomy for cancer of the rectum; (2) perforation of typhoid ulcer; (3) superficial abscesses of the liver; (4) acute nephritis (there was also chronic peritonitis); (5) sarcoma of the peritoneum (with severe hæmorrhage following an exploratory incision); (6) perforation of vermiform appendix; (7) rupture of an ovarian cyst (there was also chronic peritonitis).

Discrete tuberculosis of the peritoneum.—Four cases; 3 in general tuberculosis, and 1 in phthisis.

Tubercular peritonitis.—One case. A girl æt. 5. Dr. Hayes. The abdominal viscera were universally adherent, with abundant tubercles among the adhesions. No ascites. There were tubercular ulcers in the intestine, and death was due to phthisis.

Cancer of the peritoneum.—Three cases. In 1 there was cancer of the sigmoid (*vide* Intestine), and in 1 cancer of the gall-bladder (*vide* Gall-bladder). In the third case the stomach was affected (*vide* Cancer of Stomach, Case 2).

Sarcoma of the peritoneum.—One case (*vide* Mr. Cheyne's reports, p. 212).

DISEASES OF THE LIVER AND GALL-BLADDER.

Abscess.—Four cases.

CASE 1. *Suppuration of the bile-ducts in the liver due to gall-stones* (P.M. Book v, p. 11).—A woman æt. 48. Dr. Curnow. The liver was large, with many small abscesses in the right lobe. Bile-ducts full of bile-stained pus. Gall-bladder retracted on numerous stones. There was acute peritonitis over the liver abscesses. The common bile-duct was compressed by a mass of acutely inflamed glands, and no stone was found in it. Pancreatic duct free. Intestines normal.

CASE 2.—Multiple small abscesses in the liver, following pyelitis and septic kidney from vesical calculus (*vide* Diseases of the Kidney).

CASE 3. *Abscess of the liver due to perforation of a gastric ulcer* (P.M. Book v, p. 40).—A woman æt. 57. Dr. Curnow. In the anterior wall of the stomach, close to the cardiac orifice, there was an ulcer, about the size of a sixpence and funnel-shaped, with its widest part on the mucous membrane. It had perforated, and communicated directly with a large ragged abscess cavity in the left lobe of the liver, adhesions having formed between the liver and stomach. There was also an empyema in the right pleura, the cavity of which contained 30 oz. of pus. There was no perforation of the diaphragm. Lastly, there was a pelvic abscess with perforation into the rectum.

Case 4. *Abscess of the liver following appendicitis set up by a pin* (P.M. Book v, p. 142).—A girl æt. 10. Dr. Hayes. The abscess was in the upper part of the right lobe of the liver, and about the size of a peeled cocoa-nut. It did not extend deeply into the liver, but projected upwards, compressing the base of the right lung. The portal vein was normal. The appendix vermiformis had adhesions all round it, and had not perforated. In it was found a pin and a small quantity of pus.

Cirrhosis of the liver.—Four cases.

Case 1. P.M. Book v, p. 15.—A woman æt. 33. Dr. Duffin. Death was due to broncho-pneumonia. The cirrhosis was in an early stage.

Case 2. P.M. Book v, p. 65.—A woman æt. 36. Dr. Duffin. The liver was large and rough. There was also pericarditis, and a large pale granular kidney.

Case 3. P.M. Book v, p. 88.—A man æt. 53. Dr. Beale. This case was syphilitic, but no gummata were present in the liver, and there was no perihepatitis. For full notes *vide* Syphilis.

Case 4. P.M. Book v, p. 148.—A man æt. 43. Dr. Beale. There was extreme cirrhosis and perihepatitis, with adhesions all round the liver. Also the gall-bladder was full of stones and contained pus. The case was one of gout with granular kidneys, which latter are described with the Diseases of the Kidney.

Fatty liver.—Twelve cases. In five the liver was enlarged. One of these was due to phthisis, two to alcohol (probably), and two occurred in pneumonia. Both the last were slightly cirrhotic as well as fatty, and may have been alcoholic. In the other seven the liver was not enlarged, and death was due respectively to (1) phthisis and cancer of the peritoneum, &c., (2) abscess of the lung, (3) typhoid, (4) accident, (5) uterine fibroid, (6) scald, (7) broncho-pneumonia. The last two were not fatty to the naked eye, but proved to be excessively so under the microscope. They were both children, and the cause of the fatty change was probably toxic, as is the case in diphtheria.

Miliary tubercle.—Two cases, one in the course of phthisis and one in general tuberculosis.

Cancer of the liver.—Five cases, all secondary; two to cancer of gall-bladder with gall-stones.

Case 1. P.M. Book v, p. 102.—A woman æt. 68. Dr. Curnow. There was direct invasion of the liver by a cancer of the gall-bladder (which contained gall-stones), but with further secondary nodules in the liver. The *peritoneum* contained abundant flat-topped nodules of cancer and the omentum was converted into a large colloid mass. The *stomach and intestines* were normal.

The diaphragmatic surface of the right pleura had growths on it like those on the peritoneum.

Case 2. P.M. Book v, p. 126.—A woman æt. 48. Dr. Duffin. There was a mass of cancer involving the gall-bladder and common duct, with nodules in the peritoneum and liver. No gall-stones were found, but there was a fistula from the gall-bladder which opened into the duodenum, to the right of and above the orifice of the common bile-duct, which shows that there had once been gall-stones. Alimentary canal normal. The *lungs* contained small white secondary growths, chiefly subpleural.

The third case was secondary to cancer of the kidney, the fourth to cancer of the pancreas, and the fifth to cancer of the rectum.

Sarcoma of liver.—One case, a man æt. 41. The liver growths were secondary to enormous hæmorrhagic masses in the peritoneum. The primary growth may have been in the prostate (*vide* Mr. Cheyne's reports, p. 212).

Gall-stones.—Six cases, including the one in which there was a fistula but no stone. In two of these, both women, cancer of the gall-bladder existed (*vide* Cases 1 and 2, Cancer of Liver). In one, a woman, suppuration of the bile-ducts in the liver followed (*vide* Case 1, Abscess of the Liver). In one, a man, there was cirrhosis of the liver (*vide* Cirrhosis, Case 4). The fifth case was as follows: P.M. Book v, p. 44.—A woman æt. 69. Dr. Duffin. Death was due to cancer of the stomach. The gall-bladder was white, with a thickened wall. It was moderately distended by colourless, turbid, mucilaginous fluid, and it contained a pale-yellow crenated gall-stone, the size of a large raspberry. The cystic duct was blocked, but the common duct pervious and not dilated.

The sixth case was as follows: P.M. Book v, p. 112.—A woman æt. 62. Mr. Carless. The gall-stone had ulcerated into the duodenum through a fistula large enough to admit the forefinger, and had caused intestinal obstruction.

Cancer of gall-bladder.—Two cases (*vide* Gall-stones).

Cholecyst.—One case (*vide* Gall-stones).

Rupture of the liver.—Two cases, 1 due to being run over by a cart, many ribs being also broken; and 1 to a blow or kick.

DISEASES OF THE KIDNEY, PROSTATE, AND BLADDER.

Acute nephritis.—One case, in which death occurred from acute pericarditis.

Chronic tubular nephritis, or large white kidney.—One case.

Chronic tubular and interstitial nephritis, or large granular kidney.—Five cases. In 2 the kidney was the primary seat of disease, and in 1 of these acute pericarditis was present. In the third case there was cirrhosis of the liver as well as the kidney affection, and in the fourth the chief lesion was sarcoma of the lung. In the fifth case (P.M. Book v, p. 30) death was due to acute pneumonia, and the kidneys were large, red, and very uneven on the surface.

Chronic interstitial nephritis, or small granular kidney.—Seventeen cases. In 13 of these the change was slight, and death was due to other causes. In 3 the kidney was the primary seat of disease, and 2 of these died of cerebral lesions, which are described in full with the Diseases of the Brain.

The seventeenth case (P.M. Book v, p. 148) was one of gout, with cirrhosis of the liver as well as granular kidneys. The kidneys contained cysts and small adenomata, and the pyramids were streaked with urate of soda. Microscopically there was extensive lardaceous disease as well as interstitial nephritis.

Lardaceous kidney.—One case, that of interstitial nephritis just described.

Cancer of the kidney.—Two cases. In both the left kidney was first affected.

CASE 1. P.M. Book v, p. 139 (*vide* p. 247).

Case 2. P.M. Book v, p. 97.—A man æt. 48. Dr. Duffin. There was a nodule of cancer, the size of an apricot, at the top of the left kidney, and large masses of secondary growth in the portal fissure and the liver.

Tuberculosis of kidney.

Miliary tubercle.—Three cases, all in cases of Phthisis.

Chronic tubercular kidney.—One case (P.M. Book v, p. 136), a woman æt. 20. Dr. Dalton and Mr. Burghard. There were small tubercular cavities in both lungs, and miliary tubercles in the peritoneum. *Right kidney.*—Three times its normal size. It contained four or five loculi, the highest of which was full of curdy pus. The lower ones had been cleared out through an incision made shortly before death. The walls of the loculi were rough from the presence of tubercles, and very little kidney tissue was left. *Left kidney.*—Hypertrophied, but it contained a cheesy nodule the size of a large currant.

Infarctions in the kidney.—Four cases. Two occurred as a result of septic endocarditis. In the third there was no endocarditis, but extreme chronic aortitis and a dilated heart. In the fourth the heart was also normal, but there was acute pericarditis and sarcoma of the lung. Microscopically the infarction showed no signs of sarcoma.

Septic kidney (infected from pelvis).—Three cases, all characterised by yellow nodules (some firm and some purulent) scattered through the organ.

Case 1. P.M. Book v, p. 21.—A man æt. 68. Dr. Beale. It was a case of phthisis. There was an enlarged prostate, cystitis and pyelitis on the left side, but no dilatation of the pelvis. The right kidney was normal.

Case 2. P.M. Book v, p. 100.—A boy æt. 16. Mr. Rose (p. 241). A stone had been removed from the bladder. The right kidney was small and fibrous, and the ureter and pelvis were moderately dilated. The left kidney contained septic nodules, and there was pyelitis with dilatation. There were several small abscesses in the liver.

Case 3. P.M. Book v, p. 152.—A man æt. 55. Mr. Beale. There was a stricture of the urethra, and both kidneys had septic foci and pyelitis with dilatation. For full notes of P.M. *vide* Surgical Reports, p. 249.

Pyelitis.—Five cases; three of these have just been mentioned under Septic Kidney. The fourth was one of large pyonephrosis due to renal calculus (P.M. Book v, p. 55). The fifth case (P.M. Book v, p. 137) was a man æt. 32, under Dr. Beale. He died of phthisis, but the pelvis of the left kidney was filled with calculi. There were no septic foci in the kidney substance, and the right kidney was normal. There was an old stricture of the urethra in the membranous portion.

Pyonephrosis.—One case, due to renal calculus.

Renal calculus.—Two cases (*vide* Pyelitis).

Vesical calculus.—One case (*vide* Septic Kidney, Case 2).

Cystitis.—Three cases, one due to a stone, one to enlarged prostate, and one to stricture of the urethra.

Enlarged prostate.—One case. The left lobe was enlarged, and projected into the urethra as a rounded nodule the size of a cherry. There was a small non-injected, and therefore old false passage to the left of the caput gallinaginis. The left kidney was septic (*vide* Septic Kidney, Case 1).

Sarcoma of the prostate.—In one case of sarcomatous masses in the peritoneum it appeared probable that the prostate was the primary seat of the disease (see Mr. Cheyne's reports).

Stricture of the urethra.—Two cases (*vide* Septic Kidney, Case 3, and Pyelitis, Case 5).

DISEASES OF THE BRAIN AND CORD.

Tubercular meningitis.—There were three cases, all being young children. In two there was general tuberculosis, the meninges being merely the part most affected; and in one of these both the meningitis and the deposit of tubercle were more marked on the cortex and along the great longitudinal fissure than at the base.

Meningeal tuberculosis.—In one case of general tuberculosis there were tubercles in the pia mater, but no meningitis.

Simple meningitis.—There were three cases, in all of which the exudation was more purulent than fibrinous. In one of these, an infant, the exudation was also hæmorrhagic, and there was a suspicion of a fall on the head, but no fracture was found. The post mortem of another of these cases is described in Mr. Cheyne's reports (p. 211).

Chronic Hydrocephalus.—There was 1 case, a boy, æt. 9 months. There were the usual dilatations of the lateral ventricles and flattening of the convolutions. The venæ Galeni as seen in the velum interpositum were large and tortuous; but all round the pons, medulla and lower part of the cerebellum there was chronic meningitis with adhesion. In particular, the foramen of Majendie was blocked and the sides of the fourth ventricle were adherent to the cerebellum. The fourth ventricle was thus shut in on all sides, and the enclosed cavity had been distended by fluid, so that the floor of the fourth ventricle was quite concave. (P.M. Book v, p. 52.)

Tumours of the brain.—There were 4 cases, 3 in the cerebrum and 1 in the cerebellum; one of the cerebral cases was tubercular. The other 3 tumours were gliomata.

Case 1.—There were 4 tubercular tumours, 3 on the surface and one in the optic thalamus. The case was one of tubercular otitis (p. 293).

Case 2.—P.M. Book v, p. 80. A woman æt. 30. Dr. Ferrier. The tumour was firm, dark coloured, and about the size of an apricot. It occupied the lower part of the occipital lobe of the left hemisphere, and projecting from the lower surface it had perforated the tentorium and depressed the cerebellum, to which, however, it was only loosely adherent.

Case 3.—P.M. Book v, p. 110. A man æt. 57. Dr. Duffin. The centrum ovale on the left side was occupied by a softened mass which undermined the grey matter from the ascending frontal convolution anteriorly to angular gyrus posteriorly. The central part of this mass was composed of partially decolorised blood-clot, but the peripheral parts proved, microscopically, to be gliomatous. The basal ganglia were not affected.

Case 4.—P.M. Book v, p. 143. A woman æt. 22. Dr. Yeo. There was a tumour the size of a small hen's egg in the left half of the cerebellum close to the posterior angle. It reached the surface posteriorly and inferiorly. It was gelatinous, and in its anterior part there was a cyst the size of a small greengage, filled with clear, mucoid fluid.

The lower part of the cyst-wall was well defined, smooth, and very vascular, while the upper part was ill defined, with soft bands partly traversing the cyst cavity.

Microscopically the tumour consisted of a matrix resembling the neuroglia. In it were sparsely scattered small round cells and giant cells. The latter were multinuclear for the most part, but a few had a single nucleus and were branched like ganglionic cells. These last were in parts of the tumour which were at a considerable distance from Purkinje's cells, and must have been of new development.

Hæmorrhage into the brain.—Two cases. One case was the hæmorrhage into the glioma described above. The other is as follows:

P.M. Book v, p. 34. A woman æt. 47. There was a moderate amount of interstitial nephritis and a very greatly hypertrophied left ventricle but not much endarteritis. There was a large hæmorrhage in the right hemisphere. It had originated in the internal capsule, but had burst into the lateral ventricle, and the third and fourth ventricles also contained blood.

In front of this hæmorrhage, and just beneath the back part of the third right frontal convolution, was an old blood-cyst, the size of an almond.

Infarctions in the brain.—Two cases.

Case 1.—P.M. Book v, p. 17. A man æt. 55. Dr. Duffin. Endocarditis and cerebral embolism. The *aortic valves* were rigid and projecting, and from the free edge of one of them a small semilunar piece was missing, leaving a ragged edge, by the side of which there was a tough vegetation. The brain showed a large area of softening on the right side. This area was wedge-shaped. The apex of the wedge was situated in the corona radiata, just outside and above the internal capsule, which, with the ganglia, was unaffected. The base of the wedge was at the cortex, and began anteriorly at the lower two thirds of the ascending frontal, and ended at the angular gyrus. The whole of the wedge between the base and apex was soft and yellowish white. The middle cerebral artery was blocked by a decolourised, adherent piece of fibrin, at a point beyond the place where the long straight vessels dip into the brain to supply the basal ganglia.

Case 2.—P.M. Book v, p. 85. A man æt. 54. Dr. Duffin. In this case the valves of the heart were normal, and no vegetations or abnormal thrombi were found in the heart. All the cardiac cavities were, however, dilated, and the pericardium was adherent. The kidneys were small and granular. *Brain:* on inspecting the cortex, the middle of the left ascending parietal convolution was found to be red and soft. On opening out the fissure of Rolando, it was found that the red softening occupied both sides of the middle third of the fissure and extended upwards over the upper third of the floor of the fissure. There was also an isolated piece of red softening on the lower third of the ascending frontal convolution. On cutting into the soft area, it was found to extend into the corona radiata, forming a wedge-shaped piece. It did not reach the internal capsule. Towards the apex of the wedge the brain was pale and diffluent; at the base (by the cortex) it was less soft and hæmorrhagic. There was also a large piece of softening in the occipital lobe on the left side.

Abscess in the brain.—One case (P.M. Book v, p. 95). A man æt. 26. Dr. Curnow. The origin of the abscess was doubtful, but there was a history of traumatism. The abscess had formed in the left centrum ovale, and had a well-defined, tough, pyogenic wall. It was therefore of old standing, but had caused death by rupturing into the back part of the left lateral ventricle, from whence the pus had reached the right lateral, third, and even the fourth ventricle. The brain substance adjoining the back part of the wall of the abscess was stained bright yellow by hæmoglobin. The pus was thick, brownish, but not offensive.

Spinal myelitis.—In one case of diphtheria, dying on the thirty-fifth day, the lower part of the cord was found to be white and diffluent (P.M. Book v, p. 39).

Injuries to the brain.—Three cases. In two there was fracture of the cranium with laceration of the brain. In one a pistol-bullet perforated the skull, above the right ear, traversed the brain, and was found embedded in the posterior part of the left parietal bone (*vide* Surgical Reports, p. 244).

DISEASES OF THE THYROID GLAND.

Cystic thyroid.—One case. A boy æt. 16. Death was due to pyelitis from renal calculus (*q.v.*).

Exophthalmic goitre.—One case. A man æt. 20, who died under chloroform, administered for the purpose of partial thyroidectomy. The thyroid was large and simply hypertrophied. The cavities of the heart were dilated. The post-mortem examination was not performed by the hospital authorities on account of the death occurring under chloroform.

DISEASES OF THE PANCREAS.

Cancer.—One case (P.M. Book v, p. 120). A woman æt. 55. Dr. Yeo. There was emaciation and jaundice. Cancerous nodules in the *liver*. In the head of the *pancreas* there was a roundish tumour about the size of an orange. It compressed the common bile duct and also the duodenum, in which there was an ulcer at the point of pressure.

Fatty degeneration.—One case. There was glycosuria. Death was due to cerebral hæmorrhage (*vide* Diseases of the Brain).

DISEASES OF THE SPLEEN.

Tuberculosis.—Eight cases. In 2 of these there was phthisis. In 1 other case, in which there was general tuberculosis, there were largish caseous patches in the spleen in addition to miliary tubercles (P.M. Book v, p. 117).

Infarctions.—Four cases. In 3 there was septic endocarditis, and in 1 sarcoma of the lung.

Leucocythæmia with tumours in the spleen.—One case (P.M. Book v, p. 99). A woman æt. 19. Dr. Yeo. There was slight pericarditis with subendothelial petechiæ. The *heart* looked fatty, but under the microscope there was no fatty degeneration, but a great accumulation of leucocytes inside and around the capillaries. The *liver* also looked fatty, but under the microscope there was no general fatty change, but there were numerous patches all through the organ, in which the capillaries were choked with necrotic leucocytes, and had numerous leucocytes around them. In these patches the liver cells had lost their nuclei and were filled with minute drops of oil. *Spleen* large; in it were numerous nodules about the size of marbles, quite round, and yellow in the centre with hæmorrhage at the periphery. Microscopically these nodules were fibrous, and but for the absence of caseous areas would have closely resembled gummata. They were pigmented, and around them there was an excess of small round cells and great vascularity. The production of well-developed fibrous tissue in nodules, like this, is very remarkable. The mediastinal, lumbar, and mesenteric glands were of a light green colour, such as is occasionally seen in sarcomata.

Rupture of the spleen.—One case. An accident with fractured skull.

DISEASES OF THE FEMALE GENERATIVE ORGANS AND PELVIS.

Ovarian cyst.—Two cases.—CASE 1. P.M. Book v, p. 114. Æt. 41. Dr. Hayes. An ovarian cyst had ruptured and an operation had been attempted. The wound was healthy but there was old and recent peritonitis. There was a large fibro-myoma in the posterior wall of the uterus, and the remaining ovary showed multiple cysts.

CASE 2.—Death occurred from sarcoma of the jaw (p. 243). In the left ovary there was a unilocular cyst the size of a hen's egg.

Uterine fibro-myoma.—Two cases. One was the case of ruptured ovarian cyst (*v. s.*). The other was a large subperitoneal fibroid found in a case of cancer of the gallbladder (P.M. Book v, p. 126).

Adenomatous polypus.—In a case of cancer of the gallbladder (P.M. Book v, p. 102) three small adenomatous polypi were found inside the uterus.

Pelvic abscess was found in 1 case. It had a communication with the rectum (*vide* Diseases of the Liver).

DISEASES OF THE EAR.

There were two cases. In one there were tubercular tumours in the brain and tubercles elsewhere (*vide* Dr. Pritchard's reports, p. 293). The other case is not in Dr. Pritchard's reports, as it was admitted before October, 1893, but died in

October. In it there was necrosis of the temporal bone, thrombus in the lateral sinus, and infarctions in the lungs.

DISEASES OF THE BONES AND JOINTS.

Scoliosis.—One case, a woman æt. 27, dying of mitral disease, was found to have scoliosis with convexity to the right in the thoracic region.

Syphilis.—One case. Parrot's nodes and craniotabes (*vide* Syphilis).

MISCELLANEOUS AFFECTIONS, ACCIDENTS, &C.

Premature birth.—One case. The mother was in the hospital suffering from typhoid fever. Only a few air vesicles had been dilated. One case, an infant, was found dead in the streets, and brought into the hospital in a state of extreme decomposition.

Scald.—One case, æt. 1 year, extensive scald on the arms and back. Perforation of the duodenum, apparently just before death, as there was no peritonitis. Liver fatty.

Burn.—Two cases, both on trunk and limbs.

Gunshot wound of skull.—One case, a man æt. 50, suicide (*vide* Diseases of Brain).

Cut throat.—Two cases. CASE 1.—A man æt. 50, suicide. The thyroid cartilage was cut through, and the pharynx opened, but the vessels were not divided. CASE 2.—A man æt. 55. The cut divided the thyro-hyoid ligament, but not the large vessels. There were also two stabs on the chest, which pierced the pleura and wounded the pericardium.

Fracture of the skull.—Four cases. CASE 1.—An extensive fracture of the base, dividing the sphenoid into two pieces through the sella turcica. The brain was ecchymosed, but not lacerated. The spleen was ruptured (P.M. Book iv, p. 413).

CASE 2.—P.M. Book iv, p. 422. Also an extensive fracture of the base. Brain not lacerated. Femur and radius also fractured.

CASE 3.—P.M. Book v, p. 4. A linear fracture of the left temporal and parietal bones. Trephining had been performed, and blood clot removed from beneath the bone. The temporo-sphenoidal lobe was lacerated.

Case 4.—P.M. Book v, p. 6. The vertex was shattered into bits, the orbital plates separated, and the sphenoid divided into two lateral halves. The brain was torn. Several ribs were fractured.

Fractured ribs.—Three cases. In 1 the skull was fractured (*q. v.*). In the second nearly all the ribs were fractured. In the third case nearly all the ribs were fractured and also the left tibia. The diaphragm, pericardium, lung, liver, spleen, and pancreas were lacerated.

Fractured thigh.—Three cases. In 1 the skull was fractured (*q. v.*). In 1 the patient was run over. The third was a case of old ununited fracture admitted for operation. The patient died of sarcoma of the lung.

Fractured radius.—In 1 case of fractured skull the radius was also broken.

Fractured tibia.—One case. Ribs also fractured (*q. v.*).

Traumatic hæmatoma in the loin.—One case. Death was due to delirium tremens.

Death under chloroform.—One case (*vide* Exophthalmic Goitre).

Varicose veins.—One case (*vide* Pyæmia).

Trigeminal neuralgia.—One case. Death after operation for removal of the Gasserian ganglion. A man æt. 66. Mr. Rose (P.M. Book v, p. 46). There was slight laceration of the temporo-sphenoidal convolutions near the wound. No hæmorrhage (p. 200).

Cyst of abdominal wall.—In a case of death from mitral disease and cirrhosis of the liver, a cyst the size of a small orange was found in the middle line of the abdominal wall between the umbilicus and pubes. It lay between the fascia behind the rectus and the peritoneum. The peritoneum passed from it on to the apex and posterior surface of the bladder (which was distended and reached two inches above the pubes). The bladder was normal, and no communication existed between it and the cyst, either in the form of a tube or cord. The contents of the cyst were of two kinds, (1) pink jelly, (2) yellow pultaceous matter. The wall of the cyst was well defined and fibrous. The cyst may have been the remains of the urachus.

REPORTS

FROM THE

VARIOUS PRACTICAL DEPARTMENTS AND LABORATORIES OF KING'S COLLEGE, LONDON.

I. THE ANATOMICAL DEPARTMENT.

A Historical Sketch.

Professor—JOHN CURNOW, M.D., F.R.C.P.
Demonstrators—A. S. KENNY, M.R.C.S.; A. W. CADMAN, M.B., F.R.C.S.

THE first occupant of the chair of Anatomy in King's College was Professor Herbert Mayo, one of the surgeons to the Middlesex Hospital, who was appointed in 1830; and the first demonstrator was Richard Partridge, who was teaching at the Windmill Street school. Partridge was also a surgeon, and he afterwards became a member of the surgical staff of the Charing Cross Hospital. He taught anatomy at King's College, and also surgery at Charing Cross, from 1836 to 1840, when he resigned the latter appointment for the surgeoncy of King's College Hospital.

In 1836 the chair of General Anatomy, Physiology, and Pathological Anatomy was divided, and Richard Partridge, from being the demonstrator of practical anatomy and dissections, became the professor of anatomy, descriptive and surgical, and Mayo undertook the professorship of physiology, general and morbid anatomy. Mayo's strength was not as a descriptive anatomist, though he published a course of dissections, but he was most admirably fitted for the new chair. His works on the nervous system and its functions, his 'Outlines of Human Physiology,' and his anatomical and physiological commentaries, prove him to have been a most profound and philosophic thinker, as well as an original investigator into the anatomy and physiology of the brain and nervous system. Henry Latter was the first demonstrator under Partridge, and in 1838 he was succeeded by two remarkable men, F. T. McDougall and John Simon. The former soon gave up anatomy for the Church, and afterwards became Bishop of Borneo, and his life, which has lately been written by Dr. F. C. Turner, is one of the most interesting biographies of modern times, and brings out into strong relief his remarkable individuality. I may say that I was never so struck with the personal characteristics of any man I have met as by those of Bishop McDougall. Sir John Simon is still living, and this is not the place to speak of the achievements of the most prominent sanitarian of our times. His facility of expression and the clearness and thoroughness of his views on the advantages of sanitary reforms are in evidence in every blue-book that was issued from the Local Government Board whilst he was chief of its Medical Department, and the effect of his teachings can still be seen in every publication by his successors. William Bowman was next associated with Simon in charge of the dissecting room, and held office until 1848, when he became at first joint professor of physiology with Robert Bentley Todd, and afterwards the sole occupant of that chair. It was during this time that Bowman made his classical researches on muscle, the kidney, and the ciliary muscle; and the two greatest works that have been published in modern times in connection with anatomy and physiology were planned and being written. The 'Physiological Anatomy and Physiology of Man,' by Todd and Bowman, became the textbook of every medical student, and, *facile princeps*, drove every British rival from the field. Of the 'Cyclopædia of Anatomy and Physiology' (begun in 1835, and after twenty-four years' work finished in 1859) who can speak too highly? For accuracy and comprehensiveness this book has had no competitor, and several of the best of its articles were contributed by the teachers and students of King's College, and will always remain not only as the standard of knowledge of the time, but as landmarks to which more recent researches are truly only addenda. In this Cyclopædia will be found the clinical essays by John Wood on the pelvis, Richard Partridge on the face, Richard Bentley Todd on the nervous centres, John Reid on the cranial nerves, Arthur Farre on the uterus and its appendages, T. H. Huxley on the tegumentary organs (hair, nails, feathers, &c.), and Allen Thomson on the ovum. Apparently minor but no less important articles were contributed by Simon on the topographical anatomy of the neck, George Johnson on the kidney, Bowman on muscle, mucous membrane, and the Pacinian bodies; while Pittard, Salter, Brinton, and others wrote contributions on descriptive and general anatomy which are now the common property of every text-book. Besides descriptive and topographical anatomists, Todd and Bowman secured the co-operation of physiologists, comparative anatomists, and zoologists, such as Sharpey, Marshall Hall, Grainger, Vrolik, Carpenter, Owen, Cobbold, Thomas Bell, Milne Edwards, Newport, and Rymer Jones. In the preface Dr. Todd remarks, "How few of the members of this little phalanx of contributors have lived to see the completion of the work!" but since then nearly all the contributors and the editor himself have "passed over to the majority." Dr. Todd died early in 1860; but this work will ever be the classical monument of the scientific work of his time and generation, and we can re-echo his words after this interval of nearly forty years, as if they had been written to-day: "How efficiently this work has been done it is not for the editor to say, but he deems himself justified in affirming that for years to come this Cyclopædia will furnish a well-stocked field for reference to the student of anatomy and physiology." I go further, and say that no modern discovery, so called, in these sciences should be put on record without due reference to those engaged on this great work.

In 1848 William Brinton, who afterwards made a world-wide reputation by his investigations on "Diseases of the Stomach," and Henry Lee, one of the most distinguished of living syphilographers, were the demonstrators; and these were followed in 1851 by Hyde Salter and John Wood. Hyde Salter's bias was medical, and his work on asthma, from which he himself suffered, showed how great a loss his premature decease inflicted upon the science of medicine. John Wood was demonstrator for nineteen years, and only the students he taught, and who so well remember him, could fully appreciate the thoroughness and clearness of his daily demonstrations. His perfect skill in dissection, his excellent draughtsmanship, his most methodical exposition, are the points that at once rise uppermost in thinking of his teaching. The organising power which he exhibited in his management of the dissecting-room, the complete authority he exercised in the discipline, his kindness to the hard-working student, and the terror of his daily examinations to the lazy, have only to be mentioned for every one of his pupils who are now alive instantly to recall his familiar figure and traits. Fisher, the old dissecting-room porter, merely studied Partridge, but feared Wood. During this time he made those dissections which formed the basis of his treatise on the radical cure of hernia, and showed the true principles on which trusses should be adapted, for which he obtained the Jacksonian prize in 1861.

John Wood, in addition to describing pathological specimens from the dissecting-room, made a most important series of contributions on the variations of muscle in the human subject, and explained many of them by his dissections of the lower animals. His papers on these subjects, which he laid before the Royal Society for some years in succession, typify the excellence of his anatomical work, and the minute accuracy which he brought to bear on every problem in which he was interested. Some of these observations were quoted by Darwin as an additional reason in his argument on the "Descent of Man and other Animals." Wood also first pointed out the true relations of the aortic arch in a paper in an early number of the 'Journal of Anatomy and Physiology,' and so corrected an error in topographical anatomy which had almost become fossilised in text-book after text-book.

John Wood in 1870 followed Sir William Ferguson in the chair of Systematic Surgery, and John Berwick Perrin and the present writer were jointly appointed to succeed him. Perrin was one of the most rapid and best dissectors that I have ever known; his knowledge of muscular anatomy in animals was very extensive, and this branch of anatomy was assiduously cultivated by him, and he ardently followed out the line of original observation that he had learned from his teacher, Mr. Wood. He wrote many papers on these subjects in the 'Medical Times and Gazette,' in the first issues of the 'Journal of Anatomy,' and in the 'Proceedings of the Zoological Society.' He was also a good draughtsman, and a most excellent teacher, but not very methodical, and hence was more calculated to inspire enthusiasm in a scientific worker than to control a large class of medical students, whose ideas are mainly utilitarian. He left King's College for an appointment at Owens College, Manchester, in 1873, and has been dead some years.

During the whole of this period, from 1836 to 1873, Richard Partridge had been still Professor of Anatomy. Perrin and I lectured alternately for him during the latter part of the winter session of 1872-3. Richard Partridge's individuality was so striking, and his characteristics as a man and a teacher, that they are practically historical in King's College circles, and are so surrounded by legends and true stories that I, who only knew him in later years, can hardly pretend to present to my contemporaries or to former students any real likeness of his striking personal appearance, or any due estimate of his great powers as a teacher. He was fastidious and old-fashioned in his dress, and this was always arranged so as well to set off his slight, dapper, and characteristic figure. He was sparing of words, but every sentence was designed to tell. He was not a mere draughtsman, but a real artist, and his lectures to the Royal Academicians and their students were almost perfect. His knowledge of anatomical details was most accurate and precise, and his skill in presenting them to the students at his lectures was, I venture to think, almost unparalleled. He had a very extensive knowledge of English classical literature, and his illustrations from these classics were known not only to his class at King's College, but even to the outer world of students and *littérateurs*. His repertoire of stories apropos of anatomical details was well selected, always witty, and served in every instance to impress on the student the points he wished to emphasise. He was one of the last anatomical lecturers of the old school, and one of its best; but to-day we are scientists, and dry-as-dust retailers of mere details without any pretence of literary art, and the power of making a practical lecture an hour of enjoyment has not only departed, but is not even sought after. This generation of students is compelled to take its duties and obligations more seriously than those who had to listen to some of our teachers of twenty or thirty years ago.

The present writer was appointed the successor of Richard Partridge in 1873, and had then but little experience of the work and duties of such an important chair. I have endeavoured to follow in the historical lines of the teaching and traditions of King's College; and may refer to some papers in the 'Journal of Anatomy' on muscular and nerve irregularities, and I have described, *inter alia,* a unique specimen of a double arch of the aorta. But descriptive naked-eye anatomy gives but little opportunity for original research, and the strength of the department lies in its teaching traditions; and in this work I have been most ably supported by my demonstrators, Mr. A. S. Kenny for twelve years, and Mr. Cadman since 1891.

The most striking incident in the history of the Anatomical Department of King's College was the detection of the perpetrators of the murder of a young Italian organ-grinder in Endell Street, mainly through the instrumentality of Mr. Partridge, in 1832. I hope to give an account of their detection and trial in our next volume. J. C.

II. BACTERIOLOGICAL DEPARTMENT.

Professor—Edgar M. Crookshank, M.B.
Demonstrator—Ernest Helby, M.R.C.S., L.R.C.P., D.P.H.

The rapid development of bacteriology has been one of the most remarkable events in the history of medical progress during recent years. Twelve years ago bacteriology was only represented by researches which excited scientific interest when published, but the subject did not form a part of the training of a medical student, nor was any knowledge of it regarded as essential to the general medical practitioner. The discoveries which rapidly followed in Germany and France, and the establishment of classes of instruction for medical practitioners and scientists in Germany, created a demand for similar instruction in this country.

From the account which follows of the history of the Bacteriological Laboratory of King's College, for the eight years since its foundation, it will be seen that not only was King's College the pioneer in providing a laboratory devoted to this special branch of medical education, but the Laboratory continues to maintain a unique position in giving systematic teaching on this subject in England.

In 1886 the Council resolved to meet the great demand which existed at that time, and has since increased, for courses of lectures and practical instruction in bacteriology. Mr. Crookshank, a former student of King's College, was appointed lecturer, the first appointment of its kind in this country, and accommodation for practical instruction was provided in one of the class-rooms of the Physiological Laboratory. The success of these classes was so great that the Council resolved to provide special and permanent accommodation for the courses of instruction, and to grant facilities also for original research. For this purpose the Council created a department distinct from that of physiology, and one of the largest lecture-rooms in the college, admirably adapted for microscopical work, was converted into a teaching and research laboratory and lecture-room, and additional rooms were built for a professor and to complete the necessary accommodation. The Laboratory was duly licensed for research, and Mr. Crookshank was promoted to the newly created professorial chair. The Council * completely equipped the Laboratory with all the fittings, instruments and material necessary for the investigation of the diseases of man and the lower animals, and for the study of bacteriology in all its applications. To enter as a pupil, or for the purpose of undertaking original investigation, it was not necessary to have had any previous connection with King's College. The

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* It is only right to add that the Council were assisted to carry out this work by a donation of £1000 from Professor Crookshank.—ED.

Laboratory has been open to all, and, as set forth in the original syllabus, special inducements were offered from the very first to medical men in practice, medical officers of health, analysts, medical and veterinary officers of the Services, and any others whose duties might prevent a daily attendance.

In 1892 a class was added which would serve as an introduction to bacteriology as applied to brewing. It is well known how much benefit has been conferred on the wine and brewing industries by the researches of MM. Pasteur and Hansen, and Dr. Hansen very kindly supplied specimens of his cultivations. The class has been held in the evening, so that those who might be otherwise engaged during the day could attend.

From the foundation eight years ago up to the present date, the number of students qualified and unqualified, who have entered the Laboratory for instruction or for research, amounts to 721. This number comprises general practitioners, army and navy surgeons, medical officers of health, analysts, biologists, veterinary surgeons, and veterinary and medical students. A few have previously been connected with the College or Hospital; a great number have been qualified medical men from the United States; others have come from New South Wales, Queensland, Tasmania, China, India, Ceylon, Chili, Cape of Good Hope, and Trinidad; and if the medical officers of the army and navy on leave from foreign service are added to this list, it will be realised how widely the Laboratory is known.

Original research.—Among the first to make use of the Laboratory in connection with research for the Government may be mentioned Professor Brown, C.B., of the Board of Agriculture. The Hon. H. N. MacLaurin, M.D., President of the Board of Health, New South Wales, passed through a course of instruction, and paid special attention to actinomycosis. On his return he continued his observations, and published them in the official reports of the Board. Mr. Park, Government Veterinary Surgeon, Tasmania, came over to study bacteriology, particularly actinomycosis and tuberculosis, and was thus enabled to make valuable reports and suggestions at the Australasian Stock Conference. Professor

Anderson Stuart, of Sydney, passed through a special course of instruction, and investigated the tubercle bacillus, preparatory to proceeding to Berlin to study Koch's treatment of phthisis. His researches were published in an exhaustive report to the Government, and the assistance which he received in this Laboratory was acknowledged in the preface to his report.

Professor Dixon, of Philadelphia, entered as a pupil in the Laboratory, and laid the foundation of several interesting and valuable papers published in America.

Dr. Wynne, of London, after a course of practical study, commenced original work, and investigated the microscopical appearances in a case of actinomycosis in man, and published his investigations in the 'St. Bartholomew's Hospital Reports.'

Dr. Campbell, of Missouri, published a paper on the micro-organisms of malaria, and duly acknowledged the assistance received in this Laboratory.

Sir Hugh Beevor, of London, investigated the conditions under which the tubercle bacillus can be cultivated, and published an account in the 'Transactions of the Pathological Society'; and Dr. Phineas Abraham, of London, made use of this Laboratory in investigating the effect of tuberculin.

Dr. Damman, of Melbourne, investigated the micro-organisms of the skin, and published an account in the 'British Medical Journal,' and has since been appointed to assist Professor Lankester at Oxford.

Dr. Sibley, of London, investigated tuberculosis in snakes, and published his results in the 'British Medical Journal' and the 'Transactions of the Pathological Society.'

Dr. Hewlett, of London, investigated the pathology of Madura foot, and published a preliminary account in the 'Lancet.'

Researches have been carried out by Professor Crookshank on behalf of the Agricultural Department of the Privy Council, now the Board of Agriculture. The results were published in the following reports:

1. The so-called Hendon Cow Disease, and its relation to Scarlet Fever in Man.
2. A Micro-organism alleged to be the Contagium of Scarlet Fever in Man.

3. Anthrax in Swine.

4. Tubercular Mammitis in Cows, and the Infectivity of the Milk.

5. Actinomycosis in Cattle in Great Britain.

6. Actinomycosis in Man in Great Britain.

7. Actinomycosis in Cattle in Foreign Countries.

8. Actinomycosis in Man in Foreign Countries.

9. Cow-pox and Horse-pox.

Professor Crookshank, conjointly with Mr. Herroun, published in the 'Proceedings of the Physiological Society' "An Investigation into the Chemical and Physiological Properties of the Products of the Tubercle Bacillus," and at the request of Sir Joseph Lister investigated the effects of corrosive sublimate and carbolic acid, and other disinfectants, upon the micro-organism of erysipelas. This and other investigations formed the subject of several papers read at the International Congress of Hygiene in London.

Original investigation has been a very important part of the work conducted in the Laboratory of King's College since its foundation; but it has occupied and still retains a leading position in this country as a *teaching institution.* It was not only the first laboratory established, but it always has been, and still is, in marked contrast to the bacteriological laboratories attached to the pathological department of some of the medical schools, in that systematic courses of instruction are regularly given throughout the whole academical year, which are open to all.

It is a public laboratory, and as such has already attracted a large number of workers, not only from London and the provinces, but from our colonies and other countries.

Report for 1894.

The number of students for the past academical year amounted to 171.

Original investigations have been carried on by Professor Crookshank, Dr. Hewlett, Dr. David Arthur, and Dr. Illingworth. Professor Crookshank investigated an epidemic of skin disease in London infirmaries, and reported to the local authorities that the result of examining the incriminated milk and the water was absolutely negative.

Dr. Hewlett published a paper on Madura disease in the 'Transactions of the Pathological Society.' In this paper three specimens of Madura foot are described. Two were of the white variety. One of these is in the museum of the Laboratory, and is probably actinomycosis. Another specimen, which is in the Medical Museum, is an anomalous form with structures present which may be sclerotid tissue of a higher fungus.

Dr. Hewlett has tried different ways of cultivating the tetanus bacillus, and has described in the 'Lancet' the method which he recommends ('Lancet,' July, 1894).

Dr. David Arthur investigated the bacteriology of sewer air, and came to the conclusion that some of the micro-organisms in the air of sewers were derived from the sewage.

Dr. Illingworth made a number of experiments bearing upon the disinfection of wounds. Dr. Illingworth believes that the results indicate the superiority of triniodide of mercury as an antiseptic.

III. CHEMICAL LABORATORY.

Professor—J. M. Thomson, F.R.S.E., F.C.S.
Demonstrator—H. Jackson, F.C.S.
Assistant Demonstrators—P. H. Kirkaldy, A.I.C.; W. H. Sodeau.

The laboratories in connection with the Chemical Department are two in number: (*a*) an Analytical or advanced laboratory, open every day from 10 till 5, except on Saturdays, where students intending to become professional chemists or those proceeding for the higher University Examinations are taught; and (*b*) an Elementary laboratory, where the students are instructed by practical classes held on certain days and at certain hours during the week.

The formation of the Analytical Laboratory was carried out soon after the foundation of the College, and was placed under the charge of Prof. John Frederick Daniell, the first occupant of the chair of Chemistry. In 1840 he became associated with Dr. William Allen Miller, who was his first Demonstrator, and ultimately his successor in the Professorship.

At the time of the foundation of this Laboratory there was little or no opportunity in London for a student to obtain practical instruction in chemistry of a systematic kind, and the Chemical Laboratory at King's College under Daniell and Miller was among the first, if not the very first in London, to afford the means for such work and instruction. Since that time important additions and enlargements have been effected in the department, most of them at comparatively recent dates.

The second laboratory or practical class-room was constructed about 1867; the teaching in practical chemistry to medical students previous to that time having been carried on in the arched vaults opening out of the lowest passage. The department now possesses, in addition to the laboratories already mentioned: a lecture theatre, a tutorial class-room also used as a chemical museum, and a third smaller laboratory for research or special analytical work.

Since the foundation of the chair of Chemistry there have been many changes among the names of those occupying the junior position of Demonstrator, but since 1831 there have been only four Professors, namely John Frederick Daniell, William Allen Miller, Charles London Bloxam, and the present occupant of the chair.

From 1851 till 1870 there was a separate Professorship of Practical Chemistry, the duties of which chair were more particularly devoted to the practical teaching required by the Medical Faculty. In this division there have been only two Professors, John Eddowes Bowman and C. L. Bloxam. On Professor Bloxam's appointment in 1870 to the full charge, the separate Professorship of Practical Chemistry was united with the chair of Chemistry.

The Chemical Department at the present time provides instruction for about 180 students in the day classes and between 20 and 30 in the evening, and necessitates the staff giving their entire services to the College work. Of the students who attend during the day about 22 are working entirely in the Analytical Laboratory, with the intention of becoming professional chemists. The remainder, students in the Medical, Arts, and Science Faculties, are taught in the practical class-room, which contains accommodation for about 60 students working at the same time.

The advanced or analytical laboratory has been for many years quite full, and at certain times very much overcrowded, as its proper accommodation is limited to about 22 students. Students from other schools in London, from Oxford and Cambridge, and from Scotland and the provinces, have studied in it from time to time. The number of students attending in the elementary laboratory is regulated by the number entering the Medical and Science Faculties of the College. In the advanced laboratory the attendance has much increased in late years, and the nature of the work demanded from the students in this laboratory has been steadily advancing.

Besides the ordinary teaching work, a considerable amount of original research has been accomplished, the results of which are to be found in the 'Transactions' and 'Proceedings' of the Royal and Chemical Societies, and in other journals. In connection with the earlier work in this direction it is only necessary to refer to the many valuable researches carried out by Daniell, first alone, and then in conjunction with his successor W. Allen Miller. As instances of some of the most important of Dr. Miller's own work may be mentioned his researches on "Spectroscopy," "the Photography of Spectra," and in conjunction with Mr. Huggins the spectral photography of planets and stars.

At a later period work of a similar nature was carried out in the research laboratory by Professor Hartley, now of the Royal College of Science, Dublin, who when he held the post of Demonstrator commenced those observations on the examination and photography of line and absorption spectra, which led to his later work on "Spectrometry," finished after leaving the College.

In connection with the names of other members of the staff may be mentioned the researches of Mr. Edward Hadow, on the composition of gun-cotton (some of the earliest work on this subject), the formation and composition of the nitro-prussides, the platino-cyanides, &c., and the work of the late Professor Bloxam on the compounds of arsenic and boron, notably the constitution of arsenites and arsenates, boracic acid and borates.

Among the more important observations made in recent times are those of Professor Thomson on the action of nuclei in determining the crystallisation of supersaturated solutions; the effect of component salts on supersaturated solutions of compound salts and mixtures, and the examination of the composition and certain optical properties of double salts of nickel and cobalt; the experiments of Mr. G. Stillingfleet Johnson* on the occlusion of hydrogen by copper in its bearing on the combustion of organic substances; his examination of certain salts of albumin, and more recently his preparation and description of a variety of kreatinine found in urine.

Attached to this department there is a scholarship founded in honour of Professor Daniell, the object of which is to encourage the prosecution of original research in chemistry. This scholarship has been awarded fourteen times since 1870, and the list of scholars includes the names of six former students who have held, or are now holding the positions of Demonstrators or Assistant Demonstrators in the College. The results of the more important work done for this scholarship have been published from time to time in the 'Journal of the Chemical Society.'

Within the last year there have been two researches carried out in the department, of which brief abstracts follow. One is by Mr. Herbert Jackson, on the "Nature of Phosphorescence;" and the other by Professor Thomson and Mr. P. H. Kirkaldy, "Notes on the Formation and Composition of the Tungstates of Nickel and Cobalt."

In Mr. Jackson's paper on phosphorescence, after dealing with the greater readiness with which the phenomena of phosphorescence *in vacuo* can now be studied by using a special and newer form of mechanical air-pump, the author proceeds to the discussion of the constitution of phosphorescent substances. He comes to the conclusion that in most cases the phenomena cannot be ascribed to the impurities in the active substances, but that in many instances a presumably pure product yields phosphorescence of different colours.

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* Mr. G. S. Johnson resigned the post of Demonstrator of Chemistry in the College last session.

The result of Mr. Jackson's work shows: that the phenomena of fluorescence, phosphorescence in air on exposure to light, and phosphorescence of substances in a vacuum under the influence of the electric discharge, are of the same nature, viz. a response on the part of the substances to the operation of radiant energy propagated, after the manner of light, in undulations of short length. The author endeavours to explain the apparent break in the continuity of his explanation of these relations by showing that air and most other substances are opaque to the very short waves which excite a phosphorescent glow in many bodies. Such glowing can therefore only be obtained in high vacua.

The data on which the author's conclusions are based are drawn from a large number of experiments extending over a long period.

The investigation on the tungstates of nickel and cobalt arose out of a research made by one of the authors some years ago on the composition and certain optical properties of the double sulphates of nickel and cobalt. From the isomorphism which exists between the sulphates and the tungstates it was conjectured that salts might be obtained between those metals and this higher acid which would extend our knowledge of their properties in this direction. The older methods described by Schultze for the formation of these substances were tried, but were given up on account of the tediousness of preparation and the smallness of the yield. The method finally adopted was the fusion of molecular weights of Co_2O_3 and Ni_2O_3 with two molecular weights of sodium tungstate and tungstic acid, and six molecular weights of sodium chloride to act as a matrix from which the crystals of the single or double tungstates might deposit in cooling.

Cobalt and nickel tungstates, of the composition $CoWO_4$ and $NiWO_4$, were obtained. The cobalt tungstate was of a dull peacock-blue colour, and the nickel compound, obtained in one case in crystals over one eighth of an inch long, was of a dark brown colour and beautiful lustre.

It was found that any double tungstate might be made just as the double sulphates were, only at higher temperatures, by employing varying quantities of the oxides of nickel and cobalt. Whatever quantities of the two oxides might be used, however, the resulting compounds were always obtained in distinct crystalline forms, each substance possessing a distinct and different lustre according as the nickel or cobalt preponderated in the compound.

IV. THE NEURO-PATHOLOGICAL LABORATORY.

Professor—David Ferrier, M.D., F.R.S.
Demonstrator—William Aldren Turner, M.D.

The Neuro-pathological Laboratory was fitted up at the commencement of 1891. It consists of three workrooms, a photographic dark room, and an animal room. It was intended chiefly as a place for original research, and, with the exception of demonstrations on neuro-pathology given by Dr. Turner, is used entirely for this purpose.

It is not the object of the department to instruct students in the ordinary methods of section cutting and staining. Facilities, however, are given for original work, and several gentlemen have availed themselves of the opportunities thus afforded. The Laboratory is also used for the purpose of examining and reporting upon morbid tissues, brains, &c., in connection with the clinical work of the Hospital.

Instruction in neuro-pathology is given chiefly by means of lantern demonstrations, models, and museum preparations. The course, which is held twice yearly, is attended both by students of the College and by those interested in the subject from other institutions. As the demonstrations are given in one of the rooms of the Laboratory, accommodation is necessarily somewhat limited, but from ten to twelve gentlemen have usually attended the courses.

The original work done in the Laboratory during the past three years has been chiefly experimental and histological. Investigations have been from time to time carried on in connection with the transmission of sensation in the central nervous system; upon the functions and anatomical connections of the cerebellum and its peduncles; upon the functions and connections of the fifth cranial nerve, and its influence on the nutrition of the eye; upon the functions, connections, and relations of various other cranial nerves and their nuclei; and upon the anatomy of the central nervous system determined by Golgi's and other new methods.

Among those who have worked in the Laboratory we especially mention Dr. William Bulloch, who has recently been appointed Assistant Professor of Pathology at University College, London. From work done here he obtained the "Struthers Gold Medal," and the highest honours for his M.D. thesis at Aberdeen University.

The results of the investigations carried out in the Laboratory, so far as they have yet been published, may be found in the following papers:

1. "Hemisection of the Spinal Cord." Turner, 'Brain,' 1891.

2. "Recent work on the Cerebellum and its Relations; with remarks upon the Central Connections and Trophic Influence of the fifth nerve." Ferrier, 'Brain,' 1894, p. 1 [being the presidential address delivered before the Neurological Society of London, 1894].

3. "A Record of Experiments upon the Symptomatology and Degenerations following Lesions of the Cerebellum and its Peduncles in Monkeys." Ferrier and Turner, 'Proc. Roy. Soc.,' December 14th, 1893; 'Phil. Trans.,' 1894, vol. clxxxv (B).

4. "The Central Connections and Relations of the Trigeminal, Vago-glossopharyngeal, Vago-accessory, and Hypoglossal Nerves." Turner, 'Journ. Anat. and Physiol.,' 1894.

5. "Observations upon the Central Relations of the Vago-glossopharyngeal, Vago-accessory, and Hypoglossal Nerves, from the study of a case of Bulbar Paralysis." Turner and Bulloch, 'Brain,' 1894.

5. THE PHYSIOLOGICAL DEPARTMENT.

Professor—W. D. Halliburton, M.D., F.R.S.
Lecturer on Animal Biology—T. G. Brodie, M.D.
Demonstrator of Physiology and Lecturer on Elementary Biology . . . } P. T. B. Beale, F.R.C.S.
Junior Demonstrator of Physiology—P. C. Colls.

The Physiological Department of King's College has been honorably associated with the names of the following professors :—Herbert Mayo, Robert Bentley Todd, William Bowman, Lionel Beale, William Rutherford, and Gerald Yeo. The present professor entered office in 1890.

The Laboratory was originally designed by Professor Rutherford, but since his time it has been considerably extended. It consists at present of a large class-room for practical work, a smaller class-room for advanced practical work, a research laboratory for experimental work, a research laboratory for chemico-physiological work, a dark room for photographic purposes, a room fitted up with a carpenter's bench and hutches for animals, a private room for the professor, and a lecture theatre which is shared with the Professor of Anatomy.

The bacteriological laboratory and the neuro-pathological laboratory are recent offshoots of the physiological laboratory, and now lead a vigorous independent existence.

Of the rooms enumerated above, two have been added to the Physiological Laboratory during the past year, and the increased accommodation so afforded has greatly relieved the pressure which was before felt. One of these rooms has been fitted up with a very complete work-table, provided with water-motor, shafting, and other accessories for carrying on a class of advanced practical physiology. The room will accommodate from twelve to fourteen students. The Council granted a sum of £300 for fitting up this room, and the increased number of students who have been attracted to the Laboratory is ample evidence that the expenditure of this sum was a wise step. The other room was before an almost disused store-room; it has been cleared of rubbish, thoroughly cleaned, and will now be available for photographic and other work requiring a dark room.

A considerable amount of new apparatus has been purchased during the year, and though the Laboratory still needs a good deal in the way of the more expensive instruments, the equipment is at present sufficient to meet ordinary needs.

Towards the end of last summer session Dr. Brodie received the appointment of Demonstrator of Physiology at the London Hospital. This necessitated his resigning his position as Demonstrator here, much to the regret of all connected with the Laboratory. He, however, will retain his position as a teacher in the College, having been made Lecturer on Animal Biology by the Council. At the same time Mr. Beale received the additional title of Lecturer on Elementary Biology. Mr. P. C. Colls has been appointed Junior Demonstrator of Physiology.

As already indicated, the number of occasional students has increased during the session just concluded. The total number of those who have been working at advanced practical physiology, biology, or research, excluding the members of the teaching staff and the ordinary medical students, was 37, which is a considerable increase over previous years.

As a result of original work carried out in the Laboratory the following papers have been issued during the past year, and have all been published in the 'Journal of Physiology:'

1. "*The Proteids of Thyroid and Spleen.*" By F. Gourlay, M.D.—This consists of an investigation carried out by methods similar to those previously described by Prof. Halliburton in his investigations into the nature of the albuminous substances obtainable from various cellular structures. One of the many interesting points made out is that the colloid material in the acini of the thyroid gland is not a mucin but a nucleo-albumin.

2. "*The Proteids of Red Marrow.*" By J. R. Forrest, A.M.S. —In this collection of eosinophile cells the proteids obtained are very similar to those derived from collections of cells which are not eosinophile, such as occur in the thymus and lymphatic glands. The proteids obtained are chiefly nucleoalbumin with a smaller amount of globulin.

3. "*Note on the Chemistry of Muscle.*" By A. Whitfield, M.D.—Here it is shown that myosin is a globulin, not a nucleo-albumin; indeed, muscle contains no nucleo-albumin at all. Proteoses or albumoses and peptones are also absent. For the detection of these substances better methods were employed than used by those who have asserted the presence of such substances in muscle and other solid organs.

4. "*The Ground Substance of Connective Tissue.*" By R. A. Young, M.B., B.Sc.—This is a very complete investigation of the nature of the mucinoid substance which forms the matrix in two forms of simple connective tissue, namely, the vitreous humour and the Whartonian jelly of the umbilical cord. The chief constituent appears to be in each case a true mucin, but there are considerable differences between them.

5. "*Proteid Reactions.*" By J. W. Pickering, D.Sc.—This consists in an examination of the various colour tests used for the detection of albumin. It was undertaken with the view of determining to what constituent of the proteid molecule each is due. Considerable attention was paid to the biuret reaction, and it was found that cobalt salts, in addition to those of the related metals, nickel and copper, give characteristic colour plays, which differ in the native proteids and those hydration products of proteids (proteoses and peptones) which are produced during digestion. The chemical group to which this important reaction is due appears to be CONH, and differences in the atomic arrangement of this group will probably explain the differences in the reactions just alluded to.

6. "*The Physiology of the Embryonic Heart.*" By J. W. Pickering, D.Sc.—The importance of observations on the heart of the early embryo arises from the fact that here there is a heart which has no nerves. It is always a difficult point to decide, when one is investigating the action of a drug on the heart, whether the results observed are due to its action on the cardiac muscle or on the cardiac nervous mechanism. An ingeniously devised incubator with a glass lid enabled the observer to study the chick's heart, the egg-shell having previously been sufficiently removed to render it visible. The number of drugs, vapours, &c., employed was very considerable, but the points made out, which are chiefly of interest to

physiologists, are (1) that the rate and force of the heart vary with the temperature; and (2) that atropine and muscarine have little or no influence on the heart. The action of muscarine on the heart of the adult animal is therefore, like that of atropine, due to the presence of nerves.

7. "*Nucleo-albumins and Intra-vascular Coagulation.*" By W. D. Halliburton and T. G. Brodie.—This is a full account of experiments which the authors have been carrying out for the past three years. The main conclusions arrived at are that the active material which produces intravascular clotting in Wooldridge's tissue fibrinogen is nucleo-albumin. It can be obtained from most cellular organs, either by Wooldridge's method, or by a new method described in the paper. Lecithin is not the substance responsible for its activity. The results are not always the same, and a large section of the paper is devoted to explaining the causes of these variations. The "negative phase" of coagulation, that is the production of non-coagulable blood, does not appear to be due to the splitting off from the nucleo-albumin of an albumose, as some previous observers have suggested. No constant relation was discoverable between destruction of leucocytes and coagulation; the relationship, if any, existing between fibrin-ferment and nucleo-albumin is still a matter of conjecture only. The paper contains also protocols of experiments and analytical details in connection with the composition of nucleo-albumins.

8. "*The Chemistry of Nervous Tissues.*" By W. D. Halliburton.—This paper relates chiefly to the proteid constituents of nervous matter. It shows that they contain a very high percentage of albuminous substances; in grey matter at least 50 per cent. of the solids consists of proteid; in white matter less, and in the nerve less still. In regions like the spinal cord, where there is a mixture of grey and white matter, it is found that the amount of grey matter, of water, and of proteid vary directly the one with the others. The proteids separated out consist of globulins and nucleo-albumin.

At the commencement of the year a volume of collected papers was issued for private circulation. This consisted of reprints of those papers where were the result of original work done in the Laboratory from 1891 to 1893. It will be sufficient to give a list of their titles and authors.

1. "On the Physiology of Asphyxia and on the Anæsthetic Action of Pure Nitrogen." By Sir George Johnson, M.D., F.R.S. ('Lancet,' April, 1891).

2. "Report on the Proteids of Milk." By W. D. Halliburton ('Brit. Med. Journ.,' May, 1891).

3. "On the Chemical Physiology of the Animal Cell" (being the Goulstonian Lectures delivered before the Royal College of Physicians). ('Brit. Med. Journ.,' March, 1893.)

4. "Note on the Audibility of Single Sound-waves and the Number of Vibrations necessary to produce a Tone." By E. F. Herroun and Gerald F. Yeo, F.R.S. ('Proc. Roy. Soc.,' vol. l).

5. "On the Physiology of the Embryonic Heart: Preliminary Communication." By J. W. Pickering ('Proc. Roy. Soc.,' vol. lii).

6. "The Pigment Cells of the Retina." By J. S. Boden and F. C. Sprawson ('Quart. Journ. Micr. Science,' March, 1892).

7. "Mucin in Myxœdema: further Analyses." By W. D. Halliburton ('Journal of Pathology and Bacteriology,' May, 1892).

8. "The Fibres of Retiform Tissue." By R. A. Young ('Journal of Physiology,' vol. xiii).

9. "Does Bone contain Mucin?" By R. A. Young ('Journal of Physiology,' vol. xiii).

10. "On Fractional Heat Coagulation." By R. T. Hewlett, M.D. ('Journal of Physiology,' vol. xiii).

11. "On Lacto-globulin." By R. T. Hewlett ('Journal of Physiology,' vol. xiii).

12. "The Proteids of Kidney and Liver Cells." By W. D. Halliburton ('Journal of Physiology,' vol. xiii, 1892).

6. STATE MEDICINE LABORATORIES.

Professor—William R. Smith, M.D., D.Sc., F.R.S.Ed., Barrister-at-Law.
Demonstrators—C. A. Moor, M.A.; David Arthur, M.D., D.P.H.Camb.

One of the most important developments of the educational work at King's College in recent years has been the provision which has been made for the teaching of public health in preparation for the Diploma in Public Health, a qualification now generally given by the universities and medical corporations of the United Kingdom.

A very great stimulus was given to the whole question of special training for medical officers of health by the registration of public health diplomas, a power conferred by section 21 of the Medical Act, 1886, upon the General Medical Council, and which was obtained through the exertions of The British Institute of Public Health, or, as it was then called, The Public Health Medical Society. Again, through the exertions of this Institute, a clause was inserted in the Local Government Act of 1888, by which, after the 1st January, 1892, it became practically compulsory for all those appointed as medical officers of health to possess such a diploma.

It therefore became necessary for the General Medical Council to frame a series of regulations, compliance with which should alone enable them to give recognition by registration to the Public Health Diploma of any given examining body.

These regulations include (*a*) a six months' course of Laboratory instruction; (*b*) attendance at a fever hospital; (*c*) practical instruction for six months with a medical officer of health.

To provide the necessary Laboratory instruction, laboratories were fitted up in the southern part of the building, and equipped with all necessary appliances. These include a class-room, professor's room, large laboratory, water analysis room, furnace room, and a small station on the terrace for meteorological observations.

Of the six months' instruction required to be given, part of the work is done in the Bacteriological Laboratory under Professor E. Crookshank, M.B.

The class-room which has been recently added to the laboratories is fitted up with cupboards for museum purposes, and facilities are afforded for lantern illustrations. The classes held have been most successful, and are probably the largest in London.

In addition to the laboratory work, arrangements have been made by which practical instruction in the duties of a medical officer of health can be obtained from the medical officer of the Strand district, whilst during the whole term excursions are made weekly to places of public health interest, such as the Houses of Parliament (ventilation and drainage), the hospital and ambulance stations of the Metropolitan Asylums Board, the outfall sewage works of the London County Council at Crossness, the schools of the London School Board, various noxious trades, sewage farms, &c. Arrangements have also been made in the above laboratories for the training of public analysts, and in further proof of the energy displayed by the College in this direction it may be mentioned that a systematic course of instruction has been instituted for sanitary inspectors, and arrangements completed with the Worshipful Company of Plumbers, by which the latter company have fitted up workshops for advanced plumbing, together with a museum.

In July last a most successful Congress was held in this College, under the auspices of The British Institute of Public Health; delegates attended from most of the sanitary authorities in the United Kingdom, and a most representative gathering of some 2000 persons were present. The Right Hon. the Lord Mayor of London was the Hon. President, and Professor William R. Smith the President of the Congress, and the following gentlemen presided over the various sections:

(*a*) Preventive Medicine. Sir Peter Eade, M.D., F.R.C.P., Mayor of Norwich, and a former student of King's College.

(*b*) Chemistry and Climatology. Sir Charles A. Cameron, F.R.C.S.I., President of the Society of Public Analysts.

(*c*) Municipal and Parliamentary. Hon. President, the

Right Hon. the Lord Provost of Edinburgh; President, G. C. Whiteley, Esq., M.A., Chairman of the Camberwell Vestry.

(*d*) Engineering and Building Construction. Professor Banister Fletcher, J.P., Professor of Architecture, King's College, London.

(*e*) Naval and Military Hygiene. Sir Guyer Hunter, K.C.M.G., M.D., &c., Surgeon-General Indian Medical Department, and Hon. Surgeon to H.M. the Queen.

Full details of the Congress and the papers read will be found in the *Journal of State Medicine*, August, 1894.

7. LABORATORY OF SURGICAL PATHOLOGY.

Professor—W. Watson Cheyne, F.R.C.S., F.R.S.
Demonstrator—H. L. Lack, M.D.

This laboratory is a recent addition to the College. It has been founded to provide all the necessary teaching material for the lectures on systematic surgery; to provide accommodation for those wishing to carry on original research, and for the practical instruction of students in surgical pathology.

At the end of 1893, Mr. G. L. Cheatle resigned his appointment as Demonstrator of Surgery, and Mr. H. L. Lack was appointed to the vacant post.

The laboratory work consists in the preparation of microscopic specimens of morbid growths removed from cases in the hospital, photographing the same, and the taking of photographs of hospital cases. From these photographs slides are prepared to be used in the lantern demonstrations of each lecture on surgery. Several hundred lantern slides have been added this year to the collection in the possession of the professor of surgery, which now numbers nearly 1200. A large number of morbid growths and other material derived from cases in the hospital have been examined during the year; in some cases rapidly, for the sake of accurate diagnosis, but in most in order that the structure, &c., may be demonstrated. This work has been supplemented in some cases by inoculation in animals, and by cultivation experiments.

Students attend the laboratory to examine the collection of microscopic and other specimens, and to study the collection of splints, trusses, &c., contained in it. A few attend regularly, take part in the work, and acquire a thorough practical knowledge of it.

The original work carried out in the laboratory during the past year may be summarised as follows:

Professor Watson Cheyne has undertaken and nearly completed a series of experiments with regard to the purification of the skin, and the towels, sponges, &c., used in surgical operations. They were suggested in a paper by Mr. Lockwood, recently published in the *Lancet*, in which he stated the great difficulty he had experienced in thoroughly disinfecting the skin. This has been found to be by no means so difficult to accomplish as Mr. Lockwood states, and the ordinary precautions adopted in King's College Hospital have given entirely satisfactory results. A paper giving full details of these experiments will shortly be published.

Mr. G. L. Cheatle, F.R.C.S., has introduced two new instruments, which greatly aid in the paraffin process for preparing microscopic sections.

(1) An apparatus for rapidly dehydrating tissues. This consists of a flask, a condensing apparatus, a small receptacle—in which the tissues are hardened—to receive the condensed spirit, a syphon, and a return-pipe, by which this vessel is emptied from time to time and the spirit is conveyed back to the distilling flask. The flask is filled with alcohol and quicklime, and the temperature regulated to the boiling-point of alcohol. By this means there is a process of continuous distillation in a circle, and the tissues are bathed in a frequently-changing supply of absolute alcohol. Dehydration is complete in a few hours and little alcohol is wasted. (Extracted from the 'Journal of Pathology and Bacteriology.')

(2) An embedding apparatus. This consists essentially of a metal chamber, kept constantly at the temperature of melted paraffin, which can at once be connected with an air-

pump and thoroughly exhausted. Prepared tissues can thus be rapidly and thoroughly saturated with paraffin. There is no need for an incubator or for the troublesome method of warming the ordinary chamber of an air-pump.

Mr. A. H. Cheatle has done some dissections to demonstrate the structure and pathology of the internal ear. A paper on the 'Mastoid Antrum,' was published in the *Lancet,* in which he calls attention to the importance of this structure in relation to suppurative middle-ear disease in children. He gives in detail the results of many dissections he has made of it.

Mr. Cheatle has also recorded in the 'Archives of Otology' (vol. xxii) the account of the post-mortem examination of a case of primary hypertrophic inflammation of the tympanic mucous membrane, with an illustrated description of the microscopical appearances.

Dr. Eddowes has been carrying on investigations on certain parasitic skin diseases.

SPECIMENS OF INTEREST ADDED TO THE MUSEUM

During the Year ending September 30th, 1894.

WITH DESCRIPTIONS

By HUGH PLAYFAIR, M.D.,

CURATOR.

418[2] Tubercular disease of Right Kidney.

The kidney is enormously increased in size, and on the outer surface presents large lobulated masses. On section, the pyramids, which retain their wedge-shaped form, are almost entirely converted into caseous material, the central portion of many of them having broken down and been converted into abscess cavities with ragged walls.

The patient was a girl, æt. 17, with a large tumour in the right flank—hard, resistent, but not tender. The urine was clear, and contained a very few pus-cells and slight trace of albumen, but no blood. The patient stated that a few weeks previous to admission she had passed blood in her water. Temperature was hectic, and, just before operation, reached between 104° and 105° F. at night.

The symptoms first manifested themselves four months previously. There were no other symptoms of tuberculosis. The kidney was removed by an incision in the right linea semilunaris. The girl made a rapid recovery.

Presented by Watson Cheyne, Esq.

433[1] Cysto-sarcoma of Kidney.

The tumour occupies the pelvis and nearly the whole of the kidney substance, with the exception of its upper and lower extremities. From this central origin the main mass of the growth projects from the outer border of the kidney, forming a large, irregular and nodulated swelling. It feels hard except where the cysts have developed and produced areas of fluctuation.

The patient was a woman æt. 35. Eighteen months before death a tumour was felt in the abdomen suggestive of a floating kidney. The size of the tumour remained stationary for a considerable time, but six weeks before removal it took an extremely rapid growth, quickly occupying nearly the whole abdomen from the false ribs to the margin of the pelvis. The kidney was removed through the abdominal wall. There was considerable hæmorrhage during the operation. The patient, who was very collapsed, died about twelve hours after the operation.

Presented by Dr. CURNOW.

465[1] Villous Cancer of the Bladder.

The walls of the bladder are thickened, especially on the left side and posteriorly, where there is a thick mass of deposit. Projecting into the interior there is seen on the left lateral wall and towards the base a soft, easily-breaking-down, yellowish-white, sessile excrescence, which covers an area of $3\frac{1}{4} \times 3$ inches. In one part the growth has traversed the walls, and can be seen projecting externally, but there were no adhesions to surrounding parts. The mucous membrane on the left side is enormously thickened and rugose, but on the right it is smooth and of a dark colour; over the entire mucous membrane there is a false membrane. There is no deposit in the prostate.

From a patient æt. 62, who was admitted on February 13th, 1894, for profuse, black, tarry hæmaturia. The patient had attended as an out-patient nine years ago for retention; got better, and kept well until November, 1893, when he noticed blood in his urine; from this time the hæmaturia gradually increased until his death from exhaustion on March 3rd, 1894.

On post-mortem examination the body was found well nourished, and all the abdominal viscera appeared healthy. Microscopical section shows a columnar epithelioma infiltrating the muscle-wall.

Presented by W. R. SMITH, Esq.

510[2] Penis, Bladder, and Kidneys from a case of Stricture.

There is a stricture of the bulbous portion of the urethra. The cavity of the bladder is small, and the muscular walls enormously hypertrophied; the mucous membrane shows marked fasciculations with a hernial pouch at the right base. Both ureters are much enlarged. The kidneys are large and easily torn, and on their outer surfaces show several small abscess cavities. On section scattered through substance of kidneys are seen several pus foci, and abscess cavities communicating with the pelvis, more marked in the left than in the right kidney.

From a patient æt. 71, who had stricture for thirty years. The patient was admitted on February 16th, 1894, suffering from retention, which necessitated aspiration of the bladder. From the date of admission till his death, which occurred on March 25th, the patient had severe rigors and sickness nearly every day.

Presented by W. R. SMITH, Esq.

1549 Diaphragmatic Hernia.

The specimen shows a hole in left half of the diaphragm, through which a loop of transverse colon (the left half) passed into the pleura. The bowel is adherent to the edges of the hole. The sac has been opened in one or two places to show the contents. The hernial sac was to the left of and below the heart.

From a man æt. 35, whose death was due to hæmoptysis from phthisis; both lungs had large cavities at the apex. There were no symptoms pointing to the hernia during life. *See P.M. Register*, vol. v, p. 76.

Presented by Dr. LIONEL BEALE.

961[1] Brain with tubercular Tumours.

The Left Hemisphere. A caseous tumour the size of a small chestnut, attached to the middle third of the fissure of Rolando, is seen projecting slightly and depressing a considerable portion of the ascending parietal, and a little of the ascending frontal convolution. The tumour is loosely adherent.

The Right Hemisphere. Presents a tumour practically identical in size and position with the above, and also a smaller tumour on the parietal lobule close to the great longitudinal fissure. A tumour, also caseous, and about the size of a walnut, occupies the whole of the optic thalamus, excepting a thin portion of brain tissue, but it does not involve the internal capsule.

From a girl æt. 9 months, who was admitted on April 14th, 1894, for mastoid disease with purulent discharge.

On post-mortem examination were seen evidences of chronic otitis with necrosis. There were two or three caseous nodules in the lungs, the mesenteric glands were large and cheesy, and a few typical tubercular ulcers were found in the small intestine. Microscopically the dura mater showed subacute inflammation with tubercles; the lungs showed broncho-pneumonia and tubercle. *See P.M. Register*, vol. v, p. 113.

1479[1] Perforating Ulcer of the Appendix Vermiformis.

The specimen shows the vermiform appendix slit open by a longitudinal incision with a portion of the cæcum attached. An ulcer encircling the appendix is seen, the perforation is in the line of incision; no stones or concretions of any kind were found. The appendix was patent, and admitted a No. 4 catheter except at the ulcer. The mucous membrane of the cæcum is very inflamed, but presents no ulceration.

From a man æt. 43. *See P.M. Register*, vol. v, p. 84.

Presented by Dr. Burney Yeo.

1567 Intestinal obstruction from Gall-stones.

In the lower end of the ileum, about three inches above the ileo-cæcal valve, is seen an incision two and a quarter inches long, through which the impacted gall-stones were removed.

From a woman æt. 62, who was admitted into hospital on May 12th, 1894, suffering from constipation and sickness, and tenderness all over the right side; but there was nothing definite to be felt. The patient had had these symptoms for a week before admission. More acute symptoms setting in, the patient was operated on on May 15th, and the gall-stones were removed through the incision shown in the specimen. The patient died on May 16th.

On post-mortem examination there was slight peritonitis (not purulent), localised to the site of obstruction; a fistula was found between the gall-bladder and duodenum admitting the index finger. *See P.M. Register*, vol. v, p. 112.

Presented by Albert Carless, Esq.

1583[1] Abscess of Liver.

The upper part of the right lobe is seen to be occupied by a large circumscribed abscess cavity, which contained 20 ounces of yellowish, highly offensive pus. The walls of the cavity are thicker behind than in front. The inside of the cavity presents a ragged wall, crossed in one or two places by irregular bands of softened hepatic tissue. The liver substance in the neighbourhood of the abscess sac is surrounded by a zone of deep congestion. In another part of the same bottle, and taken from the same body, is seen the appendix vermiformis, the lower end of which contains a black pin.

From a girl æt. 10, who was admitted on July 10th, 1894, with a temperature of 104·8° F., and complaining of slight pain and tenderness in right iliac fossa. The child was constipated for four days before admission, and vomited once. In the hospital the child still suffered from constipation, and on July 11th had a rigor. On July 27th absolute dulness was noticed, extending from the angle of the scapula to the base of the lung on the right side; the breath-sounds were feeble and in some parts absent. An aspirating needle was introduced, but nothing except a little blood escaped. The patient died August 2nd.

On post-mortem examination the right lung was slightly collapsed and œdematous, and, besides the conditions above described, the intestines showed some congestion and tumefaction of Peyer's patches, but they were not typical of either typhoid or tubercle. The portal vein showed no signs of phlebitis. The peritoneum was not affected. Microscopically a mesenteric gland showed tubercular lymphadenitis. *See P.M. Register*, vol. v, p. 142.

Presented by Dr. HAYES.

Cancer of the body of the Uterus.

The following description was made at the time of removal:—Externally uterus presents a globular appearance, and to the touch a fluctuating sensation. On incision longitudinally the whole of the fundus is found to be occupied by a breaking-down, disintegrating growth; a secondary nodule is seen at the upper border of the left Fallopian tube. There are no projections or adhesions apparent on the outer surface of the uterus. The cervix is quite healthy.

From a patient æt. 58, admitted into King's College Hospital March 27th, 1894. For notes of clinical history and operation see p. 275.

Presented by Dr. JOHN PHILLIPS.

1201 Parovarian Cyst.

This is a large, smooth-lined, thin-walled, unilocular cyst of the parovarium, which contained five and a half pints of clear, straw-coloured, albuminous fluid. Where the cyst was punctured by the trocar, the investing peritoneal coat, formed of the anterior and posterior layers of the broad ligament, has been separated for a short distance from the sac of the cyst, so as to show the different layers of which the wall of a parovarian cyst consists. The Fallopian tube, which is elongated and stretched, measures eleven inches, and lies above and in front of the cyst; the fimbriæ round the ostium abdominale, through which a bristle is passed, are seen to be partly free and unattached, and partly stretched over and adherent to the cyst-wall. The ovary is below and behind.

From a woman, E., æt. 34 and single, who was admitted into Home May 8th, 1894. The patient had noticed the abdomen increasing in size for four or five years. The catamenia were regular. The cyst was removed on May 11th by an incision 2½ inches long in the median line; there were a few recent adhesions in the left iliac fossa, which were first broken down. The right ovary was quite healthy. The patient made an uninterrupted recovery, and was discharged twenty-eight days after operation.

Presented by Dr. JOHN PHILLIPS.

1216[2] Paroöphoritic Cyst of the left Ovary.

This specimen is a unilocular cyst of the left ovary, which contained two and three quarter pints of a deep-greenish, straw-coloured fluid, not markedly viscid, and easily passing through the trocar. The walls of the cyst are of a firm, fibrous character, and are much thicker than those of a parovarian cyst; but the thickening is irregularly distributed over the walls, and corresponds partly to the warty projections, which are found scattered over the lining membrane of the cyst, and partly to the remains of the ovary, which has been much flattened out and absorbed by the cyst. The lining membrane of the cyst is smooth, and is covered with two large tufts of wart-like projections with sessile bases, and with smaller nodules scattered irregularly over the surface

In one or two places these growths have perforated the walls, and infected the outer surface of the cyst. At the upper part of the specimen is a small portion of the Fallopian tube, between which and the cyst is seen the mesosalpinx.

From a patient, F. B., æt. 40, single, who was admitted into Home on April 24th, 1894. She had pain and swelling in left side for seven years. For sixteen months before admission the swelling had rapidly increased; there was slight bladder irritation. The tumour was removed by an incision in the median line 2½ inches long; on opening the peritoneal cavity two or three ounces of ascitic fluid escaped. The right ovary, being found to consist of an irregular nodular mass of extreme hardness and dense white colour, was also removed. The patient made an uninterrupted recovery.

Presented by Dr. John Phillips.

Tubo-ovarian Abscess.

The walls of the abscess-cavity are thick and irregular, formed partly of inflammatory and partly of ovarian tissue, varying from one-eighth to a quarter of an inch in thickness. The lining membrane is rough, and deposited with flakes of lymph. The Fallopian tube, which measures half an inch in diameter, is much thickened and firmly adherent to the walls of the abscess cavity, with which it seems to be incorporated. The lumen is dilated, the mucous membrane being softened and of a dark-red colour. At one end the tube opens into the interior of the abscess sac by a large opening. It is difficult to say definitely whether this opening represents the ostium abdominale or is an adventitious opening. Below the Fallopian tube two incisions have been made on the outside of the sac into what is evidently the remains of the ovary, in the stroma of which one or two cysts are seen.

The patient, M. R., æt. 41, married, was admitted into King's College Hospital May 7th, 1894, complaining of pain and swelling in the left side accompanied by difficulty of micturition. The temperature was very irregular, and accompanied by rigors and sweats. On May 16th, owing to the accession of sudden acute pain and tenderness in the abdomen, rupture of the cyst was diagnosed and the patient was operated upon. On opening the abdomen large quantities of very offensive pus welled out. After dividing many numerous and extensive adhesions, the cyst was brought to the surface and removed. The abdominal cavity was thoroughly washed out with warm boracic lotion, and a drainage-tube inserted at the lower end of the incision. The patient died seven hours after the operation with a temperature of 105·4° (*vide* p. 273).

Presented by Dr. HAYES.

1178[1] Fibroids of the Uterus.

The anterior wall of the uterus has been divided, and the cavity exposed; a linea incision in the mucous membrane along the posterior wall of the cavity shows a large submucous fibroid bulging into the cavity. Smaller fibroid nodules are seen scattered through the walls of the uterus. The cavity of the uterus measures five inches.

Presented by Dr. HAYES.

1871 Mycetoma of the Foot.

The foot has been divided longitudinally, and is seen to be generally enlarged and thickened. Embedded in the skin are several agminated particles of various shades from yellow to black. Scattered through the bony, connective and muscular tissues are cavities of various sizes, which communicate by channels with the exterior, the mouths of the channels being blocked by the agminated particles above mentioned. From the macroscopical appearances it is not possible to say whether the specimen belongs to the pale or dark variety of the disease, but Dr. R. T. Hewlett has examined the contents of the cavities, microscopically, and as the result of his examination, is of opinion that the specimen belongs to the dark variety of the fungus disease of India.

From a native of India. *See* Hewlett, 'Trans. Path. Soc., Lond., 1893.

Presented by Surgeon-Major W. K. HATCH.

MEDICAL SOCIETY OF KING'S COLLEGE,

1893-4.

President for the Sixtieth Session:
EDGAR R. WHITE, Esq., F.R.C.S.

List of Meetings, 1893–4.

Date.	*Paper by*	*Subject.*
1893.		
Friday, Oct. 27th.	Sir Joseph Lister, Bart., F.R.S.	Inaugural Address—"Points of Essential Importance in Antiseptic Treatment."
Thursday, Nov. 2nd.	T. G. Brodie, M.B.	"Some Abnormal Constituents of Urine."
Friday, Nov. 17th.	J. F. W. Silk, M.D.	"Selection of a Suitable Anæsthetic in Particular Cases."
„ Dec. 1st.	T. Burney Yeo, M.D., F.R.C.P.	"Use of Lectures in Medical Teaching."
„ Dec. 15th.	Clinical Meeting.	
1894.		
Friday, Jan. 12th.	Greville MacDonald, M.D.	"On Sneezing" (*vide* p. 55).
„ Feb. 9th.	L. T. F. Bryett, M.D., D.P.H.	"Points of Hygiene."
„ Feb. 23rd.	W. A. Turner, M.D., D.Sc.	"Discoveries of Sir C. Bell" (*vide* p. 129).
„ March 9th.	Clinical Meeting.	

The papers were read, and the Clinical Meetings held, on Fridays at 8 p.m., in the Board Room at the Hospital.

Sir J. Lister's Meeting was held in the Large Theatre at the College, and was attended by the majority of the staff and students, and a large number of visitors from other hospitals. The lecture was not reported by special request.

Dr. Brodie's was a practical demonstration on urine-testing, and was held in the Operating Theatre.

W. Turner, M.R.C.S.,
R. H. Payne-Crawfurd, M.A., } *Hon. Secs.*

WHAT OLD KING'S MEN ARE DOING.

The following pages comprise a list of former students who are engaged in hospital work, or who hold appointments in the navy, army, and elsewhere. Titles of papers contributed by them to medical literature during the year, and, in some instances, abstracts of these papers, have also been added.

To keep old King's men more fully in touch with each other, and to ensure accuracy, the editors *earnestly* request that notices of errors or omissions in this list, and of new honours, appointments, or publications, during the current year, should be sent to the Business Editor (*Dr. John Phillips*, 71, Grosvenor Street, London, W.).

ALCOCK, JOHN, Senior Surgeon, North Staffordshire Infirmary.

ALEXANDER, REGINALD GERVASE, M.D., Consulting Physician to Bradford Infirmary.

AMESBURY, SAMUEL CORNWALLIS, Brigade Surgeon, I.M.S., Bengal (retired).

ANNINGSON, BUSHELL, Secretary State Medicine Syndicate, University of Cambridge.

ARLIDGE, JOHN THOMAS, M.D., Physician, North Staffordshire Infirmary.

ATKINSON, EDWARD, Consulting Senior Surgeon, Leeds General Infirmary.

BARROW, ALBERT BOYCE, F.R.C.S., Surgeon to King's College Hospital and Royal Free Hospital, Teacher of Operative Surgery, King's College.

Bateman, William Adolphus Frederick, Senior Surgeon, Richmond Hospital.

Batterbury, Richard Legg, M.D., Surgeon, West Herts Infirmary.

Beach, Fletcher, M.D., F.R.C.P., Physician to the West End Hospital for Nervous Diseases.

The Treatment of Feeble-minded Children (*Lancet*, 1893).

In considering the treatment of feeble-minded children it is necessary to remember that, as their physical organism is usually defective, the first duty is to strengthen the body and alleviate its defects; and secondly, to undertake the moral and intellectual training required. Some of the deficiencies which are met with in these cases are fully described. The diseases to which this class of cases is liable are of an asthenic type. After attending to general hygiene, the muscles which are wasted must be nourished by exercises in which the faculties of imitation and attention should be made use of. The moral treatment should go on side by side with the physical and mental treatment; obedience must be taught, and every effort made to impart good temper and affection. The intellectual training commences by the education of the senses, and as the tactile function is the most important, commencement is made by educating the sense of touch. When this has been accomplished the patient proceeds to higher branches of learning. The histories of two cases in which the training described caused recovery are given.

On Sporadic Cretinism (*Hunterian Soc. Trans.*, 1893–4).

The observations in the paper are chiefly founded on an analysis of 116 cases, including sixteen which had been under the author's care. The ætiology was considered, and the influence of consanguinity, intemperance, phthisis, inherited mental disease, neurotic inheritance, and anxiety and fright of the mother during pregnancy was described. The lowest age at which patients have been treated was six months, and the highest forty-two years. With regard to sex in sporadic cretinism, in the cases analysed there were not quite twice as many females as males. With respect to locality, the disease appeared to prevail most extensively in England, while Scotland, France, and America had about an equal number. The author related the symptoms and alluded to the cause of the disease, and the opinion of Horsley as to the function of the thyroid gland. The diagnosis and prognosis of sporadic cretinism were touched upon, and the treatment now adopted was shortly mentioned.

Types of Idiocy and Imbecility (*Clinical Journal*, 1894).

Defects and Diseases of School Children (*Brit. Med. Journ.*, 1894).

Beach, Thos. Boswall, Surgeon-Capt., Army.

Beale, Lionel Smith, M.B., F.R.C.P., F.R.S., Physician to King's College Hospital, Professor of Principles and Practice of Medicine in King's College.

Beale, Peyton Todd Bowman, F.R.C.S., Assistant Surgeon to King's College Hospital, and to Great Northern Central Hospital.

Caries of Front of Sacrum and Sacro-iliac Disease (*Lancet*, 1893).

On the Shape of Skin Incisions (*Lancet*, 1893).

Case of Nerve Suturing (*Med. Press and Circular*, 1893).

Beevor, Sir Hugh Reeve, Bart., M.D., Assistant Physician to King's College Hospital, Examiner at the Apothecaries' Society.

Bernard, Robert Spence, Surgeon, R.N.

Bethell, Alfred, Surgeon, Bridgnorth Infirmary.

Blomfield, Arthur George, M.D., Physician, Devon and Exeter Hospital.

Bobardt, Albert Otto, Surgeon, R.N.

Bomford, Gerald, Surg.-Lieut.-Col., I.M.S., Bengal.

Bond, Richard Pratt, Surg.-Capt., Army.

Bond, Thomas, F.R.C.S., Surgeon to, and Lecturer on Forensic Medicine at Westminster Hospital.

Boobbyer, Philip, M.D., Medical Officer of Health, Nottingham.

Bradbury, John Buckley, M.D., F.R.C.P., Physician to Addenbrook's Hospital, Downing Professor of Medicine, Examiner in Medicine, University of Cambridge.

Bray, George Arthur Theodore, Surg.-Capt., Army.

Brice, Frederick Augustus, Surgeon, R.N.

Broatch, George Thomas, Surgeon, R.N.

Brodie, Thomas Grigor, M.D., Demonstrator of Physiology, London Hospital.

Brooks, Walter Tyrrell, M.A., M.D., Physician, Radcliffe Infirmary, Oxford.

Brown, Robert Charles, F.R.C.S., Consulting Surgeon, Preston and Lancashire Royal Infirmary.

Bryett, Lewis Thomas Fraser, M.D., D.P.H., Medical Officer of Health, St. Leonard's, Shoreditch.

BURGHARD, FRÉDÉRIC FRANÇOIS, M.S., F.R.C.S., Assistant Surgeon, and Teacher of Practical Surgery, King's College Hospital.

BUZZARD, THOMAS, M.D., F.R.C.P., Physician, National Hospital for Epilepsy and Paralysis.

The Knee-jerk in Diagnosis (*Clinical Journal*, 1893).

Optic Atrophy in Chronic Disease of Central Nervous System (*British Med. Journal*, 1893).

CARGILL, LIONEL VERNON, F.R.C.S., House Surgeon and Clinical Registrar, Royal Eye Hospital, Southwark.

CARLESS, ALBERT, F.R.C.S., Senior Assistant Surgeon, and Surgeon, Skin Department, and Teacher of Surgery, King's College Hospital.

On Ruptured Vas Deferens (*Lancet*, 1894).

CARLINE, WILLIAM ARTHUR, M.D., Surgeon Lincoln County Hospital.

Case of Trephining for Traumatic Epilepsy (*Brit. Med. Journ.*, 1894).

CAYLEY, HENRY, F.R.C.S., Professor of Clinical and Military Medicine, Army Medical School, Netley; Deputy Surgeon-General, Bengal Army (retired).

CAYLEY, WILLIAM, M.D., F.R.C.P., Physician to Middlesex Hospital.

Clinical Lecture on Ulcer of the Upper Digestive Tract (*Clinical Journal*, 1894).

CHEATLE, ARTHUR HENRY, F.R.C.S., Aural Clinical Assistant, King's College Hospital.

Hypertrophic Condition of Tympanic Mucous Membranes in an Infant (*Archives of Otology*, vol. xxii).

CHEATLE, GEORGE LENTHAL, F.R.C.S., Assistant Surgeon and Teacher of Practical Surgery to King's College Hospital and to West London Hospital.

CHEYNE, WILLIAM WATSON, F.R.S., F.R.C.S., Surgeon to King's College Hospital, and to Paddington Green Children's Hospital; Professor of Surgery, King's College, and Examiner in Surgery, Victoria University.

Case of Intestinal Obstruction after Appendicitis (*Trans. of Clinical Society*, 1894).

Cheyne, William Watson—*continued.*

Case of Operation for Dupuytren's Fracture (*ibid.*).

Case of Operation for External Rotation of the Leg (*ibid.*).

On Excision of the Breast for Cancer (*Brit. Med. Journ.*, 1894).

The Treatment of Wounds, Ulcers, and Abscesses, 1894 (*Young J. Pentland*).

Collier, William, M.D., F.R.C.P., Physician, Radcliffe Infirmary, Oxford; Lichfield Lecturer on Clinical Medicine.

Athletic Exercises as a Cause of Disease of the Heart and Aorta (*Trans. Med. Soc.*, vol. xvi).

Dr. Collier read at the Medical Society a paper on this subject. From the work of Dr. Peacock among Cornish miners, he showed that the symptoms of overstrain usually developed at about the age of forty. Dr. Clifford Allbutt noted the gradual onset of vascular troubles, and Dr. Da Costa placed among early symptoms dyspnœa, palpitation, and pain over the cardiac region. The influence of great muscular efforts is seen in racehorses, hunters, greyhounds, and foxhounds. On the other hand, Dr. Morgan, from an inquiry into the after health of 251 university oarsmen, concluded that they were benefited rather than injured by their exertions. Compared with long-distance runners and bicyclists, Dr. Collier noticed particularly the frequent repetition of severe muscular effort as a source of danger, and he protested against the unfortunate craze of riding long distances against time. He considered that this practice had up to the present only had time to induce the earlier changes in the heart, but amongst undergraduates he was frequently consulted for symptoms pointing to rapid dilatation of the right ventricle, such as attacks of giddiness, palpitation, and dyspnœa on exertion, and in these cases he commonly found outward displacement of the apex-beat, accentuation of the second sound over the aortic area, and a slow and strong pulse, the rate being nearer 60 than 70. He feared the marked enlargement of the hearts of athletes might have to be regarded as a morbid condition.

Cox, Alfred Harold Lissant, Surgeon, R.N.

Crookshank, Edgar, M.D., Professor of Comparative Pathology and Bacteriology, King's College.

The Prevention of Smallpox (*Lancet*, 1894).

Cross, Francis Richardson, F.R.C.S., Ophthalmic Surgeon, Bristol Royal Infirmary; Surgeon to Bristol Eye Hospital.

Cyst in Iris after Implantation of Eyelash (*Trans. Ophthal. Soc.*, 1893).

Cross, Horatio Robert Odo, Surgeon-Captain, 1st Life Guards.

Curnow, John, M.D., F.R.C.P., Dean of King's College Medical Faculty; Physician to King's College Hospital, and Professor of Anatomy in King's College.

Some Points in the Treatment of Typhoid Fever (*Clinical Journal, March 7th*, 1894).

Cardiac Failure and Dilatation of the Heart (*Lancet*, 1894).

Dalton, Norman, M.D., F.R.C.P., Professor of Pathological Anatomy, King's College, Physician and Pathological Registrar, King's Coll. Hosp.

Case of Multiple Papillomata of Colon and Rectum (*Trans. of Pathological Society*, 1893).

Dawson, Arthur Willan, Surg.-Capt., I.M.S., Bengal.

De Meric, Henry, Surgeon to French Hospital and Dispensary.

Dent, Herbert Crowley, Surg.-Capt., Army (retired).

Donnet, Jas. John Conway, Surg.-Capt., Army.

Duffin, Alfred Baynard, M.D., Physician to King's College Hospital, Joint Professor of Principles and Practice of Medicine in King's College.

A *Clinical Lecture on Delirium Tremens* (*Clinical Journal*, 1894).

Duncan, Andrew, Surg.-Major, I.M.S., Bengal.

Eade, Sir Peter, M.D., F.R.C.P., Consulting Physician, Norfolk and Norwich Hospital.

Eddowes, William, Senior Surgeon, Salop Infirmary.

Ewens, Geo. Francis Wm., Surg.-Capt., I.M.S., Bengal.

A Theory of Cortical Visual Representation (*Brain*, 1893).

Fenn, Edward Liveing, M.D., Physician, Essex and Colchester Hospital.

Ferrier, David, M.D., F.R.S., F.R.C.P., Physician, King's College Hospital, Professor of Neuro-pathology in King's College.

Footner, John Bulkley, F.R.C.S., Surgeon General Hospital, Tunbridge Wells.

At the meeting of the branch of the British Medical Association at Tunbridge, Mr. Footner gave details of a successful case of supra-pubic lithotomy in a male aged forty, and pointed out the advantages of the supra-pubic over the lateral operation. At the same meeting he narrated a case of nephrolithotomy in a male aged thirty-eight, who had at the same time a large perinephritic abscess. The kidney was exposed by the lumbar incision, and a calculus weighing 822 grains was removed piecemeal from the pelvis. The abscess was found to communicate with the kidney. The patient did well, and resumed his occupation two months after the operation, having still at that time a sinus in the loin, which occasionally discharged a little urine.

At the meeting at Lewes Mr. Footner brought forward a case of inguinal aneurism in a male aged forty-seven. The following are the details of this interesting case:

An aneurism of rapid formation, thin-walled and soft, extending from two and a half inches above Poupart's ligament to about the same distance below, measuring five inches longitudinally and six inches transversely.

Treatment.—First, rest and compression of the abdominal aorta by a horseshoe tourniquet under chloroform on two occasions for sixty-three and ninety minutes respectively. Before applying tourniquet a light diet was given for several days, and the bowels were well emptied. ʒij and ʒiij of chloroform were inhaled. No bad symptoms resulted from the compression, except slight diarrhœa on the first occasion.

The aneurism was distinctly harder to the feel after the compression.

Evidence of slight rupture of the sac of the aneurism took place suddenly, so the sac was reached by a longitudinal incision over it, then incised and the finger inserted, the feeding arteries tied, viz. the external iliac, the superficial and profunda femoris, and the deep epigastric and circumflex iliac arteries. The sac was freely laid open and clot turned out, and antero-lateral parts of sac cut away. The peritoneum was found to be not adherent to the sac, and so was able to be pushed up out of the way.

Patient did well until the eighth day, when he became delirious at night and got out of bed in the nurse's absence. The next morning signs of gangrene presented themselves in the toes and continued to spread, so that it became necessary to amputate the leg below the knee. After this the patient did well.

Fowler, James Kingston, M.A., M.D., F.R.C.P., Physician to Middlesex Hospital, and to the Hospital for Consumption, Brompton.

The Varieties of Pulmonary Tuberculosis (*Practitioner*, 1893).

French, Herbert Cumming, Surgeon-Lieut., Army.

Gibbard, Thomas Wykes, Surgeon-Capt., Army.

Gilpin, Bernard Bevill, Surgeon, R.N.

Gooch, James Uzard, Surgeon, Windsor Royal Infirmary.

GRIFFITHS, HUGH ST. DAVID, Surgeon, R.N.

GUNN, FRANK WALTER, M.D.

Labour complicated by Pleuritic Effusion (*Lancet*, 1893).

The patient was first seen for collapse and dyspnœa during labour: delivery was effected rapidly by forceps. Temporary relief followed for twenty-four hours, but the dyspnœa returned, with cough, flushed face, and temp. 103° F. The left chest was found filled with fluid up to level of third rib. On the fifth day the temperature rose to 104°, and aspiration was performed, 25 ounces of sero-purulent fluid being drawn off. The same evening the temperature fell to 99°, and the breathing became easy.

The lung has since expanded well; there was no re-accumulation of fluid, but signs of a thickened pleura can be made out.

HARDING, ARTHUR, Surg.-Major, Army.

HARRIES, JOHN DAVIES, Consulting Surgeon, Salop Infirmary.

HARTRIDGE, GUSTAVUS, F.R.C.S., Ophthalmic Assistant Surgeon and Lecturer on Ophthalmology, Westminster Hospital.

HASLETT, JOHN COURTENAY, Surg.-Major, Army.

HATCH, WILLIAM KEITH, Surg.-Major, I.M.S., Bombay.

HAYES, THOMAS CRAWFORD, M.A., M.D., F.R.C.P., Physician-Accoucheur, and Physician for Diseases of Women and Children, King's College Hospital, Examiner in Midwifery and Diseases of Women, R.C.P., London.

HEATH, CHRISTOPHER, F.R.C.S., Surgeon to University College Hospital, Holme Professor of Clinical Surgery, University College.

Practical Anatomy: a Manual of Dissections, 8th edit., 1893.

Iujuries and Diseases of the Jaws (*Jacksonian Prize Essay*), 4*th edit.*, 1894.

Dislocation of the Femur (*Clinical Journal*, 1893).

HEBB, RICHARD GRAINGER, M.D., F.R.C.P., Assistant Physician and Pathologist to the Westminster Hospital.

Primary Cancer of Pleura (*Trans. Path. Soc.*, 1893).

Cancer Bodies (*ibid.*).

Germicidal Action of the Blood, Immunity, and Parasitic Protozoa (*Westminster Hospital Reports*, 1893).

HEWLETT, RICHARD TANNER, M.D., Assistant Bacteriologist, British Institute of Preventive Medicine.

HOAR, CHARLES EDWARD, M.D., Physician, West Kent General Hospital.

Hodges, James, Assistant Surgeon, Suffolk General Hospital.

Hodgson, Decimus Filius de, Brig.-Surg., Army (retired).

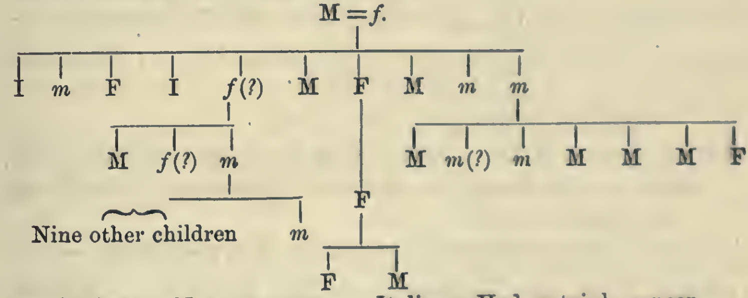
Holthouse, Edwin Hermus, F.R.C.S., Surgeon, Western Ophthalmic Hospital.

Hooper, Charles, Consulting Surgeon, Bucks General Infirmary.

Howlett, Edmund Henry, F.R.C.S., Surgeon, Hull Royal Infirmary.

A Family History of Cancer with Remarks (*Quarterly Med. Journal, July*, 1894).

In this paper Mr. Howlett gives an interesting family history of cancer, the family having come under his notice in the following manner:—In March, 1893, two brothers called at his house, and on examining the younger, aged twenty-two, he found a cancer of the rectum, of which this patient died shortly afterwards. In the following April the other brother called with regard to life insurance, and, remembering the history, the rectum was examined without finding any disease, but four months later an extensive growth was found in that region. On inquiring into the family history it was ascertained that there had been a considerable number of cases of cancer (as shown in the following table), on one side running through four generations. It is interesting to note that the family had for the most part resided on the banks of the Humber or in the fenny districts of Lincolnshire. The following is the family tree:



Capitals = Not cancerous. *Italics* = Had certainly cancer.
Italics (?) = Doubtful cancer. I = Died in infancy.
M = Males. F = Females.

Hughes, Matthew Louis, Surg.-Capt., Army.

Special Commis. Benjazi, Typhus Epidemic, 1893 (*Malta Government*).

Epidemiology of Mediterranean Fever (*Brit. Med. Journal*, 1893).

Bacteriology of Mediterranean Fevers (*Annales de l'Institut Pasteur*, 1893).

Hulke, John Whitaker, F.R.C.S., F.R.S., President Royal College of Surgeons, Surgeon to Middlesex Hospital.

James, Charles, Staff Surgeon, R.N.

James, Hy. Daniel, Surg.-Capt., Army.

Jérome, John William, Surg.-Major, Army.

Johnson, Sir George, M.D., F.R.C.P., F.R.S., Physician Extraordinary to H.M. the Queen, Emeritus Professor Clin. Med., King's College.

Jones, Richard Nelson, Obstetric Physician, Swansea General Hospital.

Kelly, Charles, M.D., F.R.C.P., Professor of Hygiene, King's College, Medical Officer of Health, W. Sussex Dist.

Kelsall, Charles James Seddon, Surgeon, R.N.

Lack, Harry Lambert, M.B., F.R.C.S., Assist. Physician, Hospital for Diseases of Throat, Golden Square.

Lawson, George, F.R.C.S., Surg. Oculist in Ordinary to H.M. the Queen; Surgeon, Middlesex Hospital.

Le Mottée, George Herbert, Surg.-Major, Army.

Le Quesne, Ferdinand Simeon, V.C. Surg.-Capt., Army.

Lethbridge, Alfred Swaine, C.S.I. Brig.-Surg.-Lt.-Col., I.M.S., Bengal.

Lewer, Alfred, Surg.-Maj. (retired).

Lewer, Robert, Surg.-Maj.-Gen., Army.

Lewis, Percy, M.D., Surgeon, Victoria Hospital, Folkestone.

Abstract of Notes of One Hundred Operations performed at the Hospital (*Bale*), 1894.

Among the list are amputations, ovariotomies, gastrostomy, hysterectomy, excisions of the breast, osteotomies, club-foot operations, excision of the knee, arthrectomies, nerve suture for spina bifida, removal of strumous glands, for varicose veins, and plastic operations. Specially noteworthy is a case of supra-pubic lithotomy in a man of sixty-six, in which the bladder was sewn up at the time of the operation. This healed in a week. The stone weighed two and a quarter ounces. Three cases of empyema recovered after removal of rib. The list concludes with twelve hernia operations, either for radical cure or for strangulation. In one of the latter, owing to extreme tympanites, the intestines had to be punctured eight times before the prolapsed portion could be returned. The patient recovered completely. Two cases of radical cure were performed by Watson Cheyne's method, the others by closing the opening in the abdominal wall with silver wire.

Longhurst, Bell Wilmott, Surg.-Lieut., Army.

MacDonald, Greville, M.D., Assistant Physician in Charge of Throat Department, King's College Hospital; Physician to Hospital for Diseases of the Throat, Golden Square.

Hay Fever and Asthma, 1893.

Ozæna, or Atrophic Rhinitis (*Clinical Journal*, 1894).

McHardy, Malcolm Macdonald, Ophthalmic Surgeon, King's College Hospital; Professor of Ophthalmology, King's College.

Management of Juvenile Eyesight (*Clinical Journal*, 1894).

MacNab, Allan James, Surg.-Capt., I.M.S., Bengal.

MacNamara, Charles Nottidge, F.R.C.S., Surgeon and Clinical Lecturer on Surgery to Westminster Hospital.

Maling, Edwin Allan, Consulting Surgeon, Sunderland Infirmary.

Maling, William Haggarth, Surgeon, Sunderland and North Durham Eye Infirmary.

Marsh, Frank, F.R.C.S., Surgeon and Lecturer on Clinical Surgery, Queen's Hospital, Birmingham.

May, Arthur William, Staff Surgeon, R.N.

Mayo, Alfred Charles, Surgeon, Great Yarmouth Hospital.

Melladew, Heinrich Frederick Lawartz, Surg.-Lieut.-Col., Army.

Moberly, Herbert John Robert, Surg.-Major, Army.

Morris, William Albert, Surg.-Major, Army.

Nash, William, Surg.-Lieut.-Col., Army.

Nicholson, Arthur, M.D., Surgeon, Sussex and Brighton Hospital for Diseases of Eye.

Nicholson, Ronald William Edward Huntly, Surg.-Major, Army.

Norman, William Henry, Staff-Surg., R.N.

Parrott, Thomas Godfrey, Surgeon, Bucks General Infirmary.

Parsons, Francis John Crane, Surgeon, Bridgwater Infirmary.

Partridge, Samuel Bowen, Hon. Surg. to H.M. the Queen; Depy. Surg.-General, Bengal Army (retired).

PENNY, JEREMIAH, Surg.-Capt., I.M.S., Madras.

PENNY, WILLIAM JOHN, F.R.C.S., Surgeon, Bristol General Hospital.

PETCH, RICHARD, M.D., Physician, York County Hospital.

PHILLIPS, JOHN, M.A., M.D., F.R.C.P., Assistant Obstetric Physician, King's College Hospital, Physician British Lying-in Hospital, Examiner in Midwifery, University of Cambridge.

On the Methods of Treatment for Radical Cure of Uterine Cancer (*Medical Week*, 1893).

Clinical Cases in Gynæcology (*Clinical Journal*, 1894).

Case of Extra-uterine Gestation, in which Fœtal Death probably occurred at end of sixth month, &c. (*Trans. Obstetrical Society*, 1893, vol. xxxvi).

PHILPOT, CHARLES WILLIAM, M.D., B.Sc., Physician, Croydon General Hospital.

PHILSON, SAMUEL COWELL, Surg.-Capt., Army.

PLAYFAIR, WILLIAM SMOULT, M.D., F.R.C.P., LL.D., Physician-Accoucheur to H.I. and R.H. the Duchess of Coburg, Physician for Diseases of Women, King's College Hospital; Professor of Obstetric Medicine in King's College.

PORTER, WILLIAM SMITH, M.D., Physician, Sheffield General Infirmary.

POWELL, JAMES, Surg.-Lieut.-Col., Army.

POWELL, SIMPSON, Surg.-Capt., Army.

PRIESTLEY, SIR WILLIAM OVEREND, M.D., F.R.C.P., LL.D., Consulting Obstetric Physician, King's College Hospital, and the British Lying-in Hospital.

PRITCHARD, URBAN, M.D., F.R.C.S., Aural Surgeon, King's College Hospital, Professor Aural Surgery in King's College.

RALFE, CHARLES HENRY, M.D., F.R.C.P., Physician, London Hospital.

Some Hints regarding the Diet in Diabetes Mellitus (*Clin. Journ.*, 1894).

RAMSAY, GEORGE, Surgeon-Lieut., I.M.S., Bengal.

Richmond, Onslow Robert, Surgeon, Gravesend Hospital for Seamen.

Rogers, Edward Alan, Surgeon, R.N.

Rope, Henry John, F.R.C.S., Surgeon, Salop Infirmary.

Rose, William, F.R.C.S., Surgeon, King's College Hospital; Professor Clinical Surgery, King's College.

Cleft Palate and its Treatment (*Clinical Journal*, 1893).

Clinical Lecture on Umbilical Hernia (*Clinical Journal*, 1894).

Sansom, Arthur Ernest, M.D., F.R.C.P., Physician, London Hospital.

Seaman, Albert Baird, Surgeon-Lieut.-Col. I.M.S., Bengal.

Sedgefield, Arthur Robert Wyatt, Surgeon-Major, I.M.S., Bengal.

Short, Thomas Sidney, M.D., Assistant Physician, General Hospital, Birmingham.

On some of the Conditions of the Body, and Alterations in its Structure, which increase the Dangers of Anæsthesia (*Journal of the British Dental Association, February* 15*th*, 1893).

The author contends that statistics of the relative dangers of anæsthetising fluids tend to throw the actual condition of the patient into the background. The earlier part of the paper is devoted to the mental or nervous state of the person about to be anæsthetised; then the bodily state is discussed with special reference to fatty heart, atheroma of the arteries, and emphysema of the lungs, with their signs and symptoms; the concluding paragraph being devoted to the administration of anæsthetics in pregnancy.

Some Physiological Facts connected more or less with Anæsthesia (*Journal of the British Dental Association, July* 16*th*, 1894).

On some of the Clinical Aspects of the Later Stages of Gout, Rheumatism, and Rheumatoid Arthritis (*Birmingham Med. Review, April*, 1894).

Dr. Short's experience of chronic joint affections in old people in the Birmingham Infirmary leads him to think that the distinctions so finely drawn between the above diseases are in many cases artificial, and this paper was written to show how types of each disorder may blend or alternate with the others, and even in some cases completely replace the earlier condition, as when rheumatoid arthritis replaces gout. It is the later stages of these diseases that form the subject of the paper. The summary is thus stated by the author :—" Whether looked at through their histories, joint troubles, or constitutional symptoms the later stages of gout, rheumatism, and rheumatoid arthritis present clinically a relationship so close that a common original cause is suggested."

SIBBALD, THOMAS MARTYN, Staff Surgeon, R.N.

SICCAMA, RINSO ROBERT, Dep. Insp.-Gen., R.N.

SILCOCK, ALEXANDER, Surgeon-Major, I.M.S., Bengal.

SILK, JOHN FREDERICK WILLIAM, M.D., Anæsthetist, King's College Hospital.

Anæsthetics in Operation for Adenoid Growths (*Lancet*, 1893).

The Uses and Misuses of Anæsthetics (*ibid.*, 1894).

SLOGGETT, ARTHUR THOMAS, Surgeon-Major, Army.

SLOGGETT, HENRY MAXWELL, Surgeon-Capt., Army.

SMITH, HENRY ERNEST HILL, Surgeon-Capt., Army.

SMITH, ROBERT SHINGLETON, M.D., Senior Physician, Bristol Royal Infirmary.

Pulmonary Embolism with Endoarteritis (*Med. Press and Circular*, 1894).

Membranous Enteritis (*Clinical Journal*, 1894).

Dr. R. Shingleton Smith, in the 'Medical Annual,' 1894, has a paper on "The Rôle of Antiseptics in the Treatment of Phthisis." He first treated the question historically, showing that Dr. William Budd, of Clifton, had in 1867 announced his belief that the destruction of tubercular matter would eventually rid us of this fatal scourge. After a short discussion of measures for the prevention of phthisis, he laid stress on the value of creasote or guaiacol. The latter he has employed largely; he has given it internally in quantity amounting to sixty minims daily, and has also given it hypodermically in a single dose daily of thirty minims, diluted with almond oil. He questions whether it has not been too readily assumed that these drugs have no direct action on the bacilli of tubercle, or on the secondary contaminating streptococci associated therewith. Although the bacilli may not be actually destroyed, their power to grow and multiply may be considerably impaired. After dealing with antiseptic inhalations, intralaryngeal sprays, medicated atmospheres, inunctions, and intrapulmonary injections, he discussed the destruction of the virus after its discharge from the body, insisting on the value of proper spittoons and the avoidance of expectorating on the ground or into handkerchiefs.

Dr. R. Shingleton Smith, on June 28th, 1893, delivered the Presidential Address to the Bath and Bristol Branch, on "Twenty-five Years of Clinical Work."

SMITH, WILLIAM ROBERT, M.D., D.P.H., Professor Forensic Medicine, and Director of Laboratory of State Medicine, King's College.

SMITH, WILLIAM ROBERT—*continued.*

The Evidence in Favour of River Water as a Source of Domestic Water-supply (*Journ. of State Medicine*, 1894).

SMITH, WILLIAM ROBERT, M.D., Medical Registrar, King's College Hospital.

SPARKES, CLAUDE STEPHEN, Surgeon-Capt., Army.

SPARROW, HORATIO S. R., Staff Surgeon, R.N.

SPENCER, FRANCIS HENRY, Surgeon-Lieut., Army (retired).

SPENDER, JOHN KENT, M.D., Physician, Royal Mineral Water Hospital, Bath.

STYRAP, JUKES DE, M.D., Physician Extraordinary, Salop Infirmary.

SWAIN, WILLIAM PAUL, F.R.C.S., Surgeon, South Devon and East Cornwall Hospital.

Treatment of Uterine Fibroids by Abdominal Section (*Brit. Med. Journ.*, 1894).

Closure of the Jaws from Injury and Arthritic Inflammation (*Lancet*, 1894).

TATHAM, C. J. WILLMER, Surg.-Capt., Army.

TAYLOR, CHARLES H., M.B.

Case of Skin Grafting after Burn (*Sheffield Med. Journal*, 1893).

The case was that of a boy aged seventeen, admitted with extensive burns of left upper extremity, the skin being completely destroyed from the wrist up and on to the shoulder. Grafting was done from the amputated leg of another patient; the cause of the amputation being a useless leg after injury. Later some grafts were taken from the boy's own thigh. The ultimate result was a useful limb, with free movement of wrist, elbow, and shoulder.

TEALE, THOMAS PRIDGIN, F.R.C.S., Consulting Surgeon, Leeds General Infirmary.

Bowman Lecture, 1893 (*Ophthalmic Soc. Reports*).

THOM, GEORGE, Surgeon, Royal Albert Hospital, Devonport.

THOMPSON, EDMUND SYMES, M.D., Consulting Physician to Brompton Hospital for Consumption, Gresham Professor of Medicine.

Thomson, St. Clair, M.D., F.R.C.S., Senior Clinical Assistant, Throat Hospital, Golden Square; Editor of *Atlas of Nasal Anatomy*, 1894; Secretary to Laryngeal Section, International Congress, Rome, 1894.

Tirard, Nestor, M.D., Professor of Materia Medica and Therapeutics, King's College, Physician, King's College Hospital and Evelina Hospital for Sick Children, Examiner, Materia Medica, University of London and Royal College of Physicians, London.

The Sequelæ of Diphtheria, read at the Maidstone meeting of West Kent Branch of British Medical Association.

Tudor, John, Consulting Surgeon, Dorset County Hospital.

Turner, Nathaniel Henry, Hon. Surgeon, Birmingham Lying-in Charity.

Turner, Richard, Surg.-Lieut.-Col., Army.

Underwood, Arthur Swayne, Professor Dental Surgery, King's College, Dental Surgeon, King's College Hospital.

Vachell, Charles Tanfield, M.D., Physician, Glamorgan and Monmouth Infirmary.

Acute Nephritis from Sewer Air Poisoning (*Lancet*, 1894).

Vachell, Herbert Redwood, M.D., Out-patient Physician, Glamorgan and Monmouth Infirmary.

Vann, Alfred Mason, Surgeon, Durham Co. Hospital.

On Smallpox and Vaccination (*Public Health*, 1894).

Warner, Francis, M.D., F.R.C.P., Physician to London Hospital, and Lecturer on Materia Medica and Therapeutics, London Hospital Medical College.

On Physical Signs of Nerve Disease: a Clinical Lecture (*Clinical Journal*, 1894).

Watson, W. Spencer, F.R.C.S., Surgeon, Throat Department, Great Northern Hospital.

Webster, Percy Lawrance, Dental Surgeon, Metropolitan Hospital.

White, Ernest William, M.D., Professor of Psychological Medicine in King's College.

WHITFIELD, ARTHUR, M.D., Medical Registrar and Tutor, King's College Hospital.

WILLCOCKS, ARTHUR DURRANT.

Mr. Arthur D. Willcocks, on June 28th, 1894, delivered the Presidential Address before the Annual Meeting of the West Somerset Branch of the British Medical Association at Taunton. He indicated the great local interest of the subject of sanitation of public buildings since the Act for preserving the health of prisoners in gaol and preventing gaol distemper, which was passed in 1774, was largely the outcome of the energy displayed by Alexander Popham, who was at that time senior member for Taunton. He was among the earliest to fully appreciate the national importance of John Howard's reports on prisons, and it was due to his influence that Howard was called before a committee of the House of Commons in 1774, examined at length as a witness, and thanked publicly at the bar. In reprinting this interesting address Mr. Willcocks appended a valuable chronological table of outbreaks of gaol fever.

WILLCOCKS, FREDERICK, M.D., F.R.C.P., Lecturer Materia Medica and Therapeutics, and Joint Lecturer Practical Medicine, Charing Cross Hospital.

WILSON, STEVENSON MORETON WIGHTMAN, Consulting Surgeon, West Norfolk and Lynn Hospital.

WINN, ALGERNON-WILLIAM, Surgeon, R.N. (retired).

WOODWARD, ALFRED, Surgeon, Royal Isle of Wight Infirmary and County Hospital.

WRIGHT, ROBERT TEMPLE, Brig.-Surg. Lieut.-Col., I.M.S., Bengal (retired).

YEO, ISAAC BURNEY, M.D., Physician, King's College Hospital, Professor of Clinical Therapeutics, King's College; Examiner in Medicine at the Royal College of Physicians.

A Manual of Medical Treatment, 1893.

On a Case of Jaundice from Malignant Disease (*Clinical Journal,* 1894).

The Management of Fevers (*American Journal of the Medical Sciences,* 1894).

THE VOLUNTEER REPORT.

By VALENTINE MATTHEWS, M.D.

The interest of a Medical School in volunteering is naturally chiefly directed to its medical service; for although medical men and medical students are occasionally found in the combatant branches of the service, it is only natural and right that they should devote themselves to that branch for which their technical education renders them peculiarly fit; and now that the number of wounded in any future war, owing to the development of magazine rifles, quick-firing guns, &c., is likely to far exceed that in any previous war, it becomes more than ever the duty of all engaged in medical work to make provision, as far as possible, for those who are unfortunate enough to suffer in the defence of their country.

The Medical School at King's contributes its share to the Volunteer Medical Service. Several members of the staff and many past students are volunteer medical officers, while the present students are mainly represented by the King's section of No. 1 Company, Volunteer Medical Staff Corps, the most energetic of the student companies in London, and commanded by an old King's man. The doings of this corps during the past year will, therefore, claim the notice of King's men interested in the volunteers.

No. 1 Company is composed of four sections, the other three being University, Middlesex, and Charing Cross.

The work of the corps is to succour and give the necessary attention to the sick or wounded soldier, carry him to a place of safety, transport him to the rear to the dressing station and field hospital, and render suitable immediate assistance until the time when he can receive more permanent surgical or medical aid at the base of operations. The tactical unit is a bearer company, with its medical officers, compounders, bearers, cooks, &c., and a quantity of equipment and transport, as will be seen later on.

Bearer companies are now being formed in each brigade of volunteers, officers and men being selected out of the different corps composing the brigade, and specially trained in their duties.

These companies are permanently attached to their brigades and accompany them in their movements. The Volunteer Medical Staff Corps differs from most volunteers in having its companies in the scheme of mobilisation, brigaded with regular troops.

Ever since the formation of the corps, some nine years ago, the King's section has shown an active interest in its work, and a number of students have passed through the ranks, many of them becoming sergeants or staff sergeants before leaving; and this year's experience shows that the King's men take as great an interest as ever in the work, although the number enrolled leaves something to be desired.

The corps went away at Easter to the great military hospital at Netley, where, in addition to field work with a bearer company and an interesting route march, during which a broad river was crossed in row-boats, they had an opportunity of seeing something of the routine of a military hospital; and in August last spent a week under canvas at Aldershot, where they were associated with other companies of the corps from Edinburgh, Aberdeen, Glasgow, Leeds, and Maidstone, the three former being student companies. In both of these outings the King's section was represented. The work at Aldershot this year was particularly interesting, as in addition to the usual camp duties and exercises peculiar to the corps, such as the drills with stretchers, ambulance, loading railway waggons with wounded, digging camp kitchens, tent pitching, and the like, the complete equipment and transport of a bearer company in the field was handed over to the corps and made use of by each company in succession. To give some idea of this equipment and transport it may be said that it comprises some fifteen waggons and carts, ten of which are ambulances. The remainder carry stores, medical and surgical appliances and comforts, tents, forage, &c.

On one day No. 1 Company with a proportion of men from other companies took part in a field day, the men having been previously warned and told off to their duties, and taking with them nearly the whole of this transport and equipment fully horsed, thus having an opportunity of showing in the field how far they had benefited by the instruction they had received in camp. After a march of some five or six miles to the rendezvous, and as soon as the engagement commenced, a site was chosen for the dressing station and collecting station, bearers with stretchers, &c.

They were sent out to the fighting line, the stores unpacked and prepared by the dressing-station party ready for the reception of the wounded, who began to come in quickly as soon as the bearers got to work. The engagement resulted in a defeat, and the rapidity with which the equipment was collected, packed, and loaded into the waggons showed that the men had mastered the instruction which they had received. The whole of the equipment and appliances, comprising medicines, instruments, dressings, splints, medical comforts, and food, amounting in all with the cases to between three and four tons, were packed into the waggons ready to start in about ten minutes, which must be regarded as a very satisfactory performance. The company afterwards marched past before H.R.H. the Duke of Connaught, with all its waggons and equipment.

The camp at Aldershot this year is the most instructive and pleasantest that the corps has ever had there, and although the weather was not of the best, every one managed to get comfortable and enjoy the experience.

The corps was invited to take part in the manœuvres of some of the brigades of regulars at Aldershot in June and July, but unfortunately the time of year was not convenient. It is hoped, however, that at a future date a similar opportunity may be given at a more favorable time.

The Challenge Shield of the corps was competed for in

November, and won by No. 1 company, which is the only medical company which has ever succeeded in winning it.

King's men took the following prizes:

Athletic sports open to all the companies in camp: 100 yards, H. A. Ahrens. Best camp kitchen, 2nd prize, privates: J. H. Powell, H. J. Walker, and C. J. Mayhew; while in a scratch quad competition, H. A. Ahrens and A. Stockton were in the winning squad.

There was also a shooting match between the Shooting Club of the corps and the Sergeants of the Regulars; the latter won the match, but a King's man made the highest score of the losing side. No. 1 Company also played a cricket match against the Maidstone Company; No. 1 won easily.

In February last, Surgeon-Major W. R. Smith, 3rd V. B. Queen's Own, R. W. K. Regiment, completed twenty years' service, and was promoted to the rank of Surgeon-Lieutenant-Colonel, also receiving the Volunteer's Decoration for long and meritorious service.

The following are some of the names of King's men who hold commissions in the Volunteers.

Smith, Professor W. R.—Surgeon Lieutenant-Colonel (V.D.), 3rd V. B. Queen's Own (Royal West Kent Regiment).

Rose, Professor W.—Surgeon Lieutenant, 13th Middlesex (Queen's Westminster).

Cheatle, G. L.—Surgeon Lieutenant, 3rd V. B. Queen's Own (Royal West Kent Regiment).

Baines, M.—Surgeon Lieutenant-Colonel (V.D.), 1st Middlesex Vol. R. E.

Baddely, C. E.—Surgeon Lieutenant, 2nd V. B. King's Shropshire L. I.

Bateman, W. A. F.—Surgeon Major, 3rd V. B. East Surrey Regiment.

Batterbury, R. L.—Surgeon Captain, 2nd V. B. Bedford Regiment.

Bell, W.—Surgeon Major, 1st Cheshire A. V.

Bryett, L. T. F.—Surgeon Lieutenant, 3rd V. B. (Queen's Own), Royal West Kent Regiment.

Chawner, Alfred.—Surgeon Captain, 2nd V. B. Sherwood Foresters, Derbyshire Regiment.

Coffin, R. de Maitland.—Surgeon Captain, 3rd Queen's Royal West Surrey Regiment.

Hughes, E. A.—Surgeon Captain, 1st London (City of London Rifle Brigade).

Matthews, V.—Surgeon Captain, London Companies Volunteer Medical Staff Corps.

Morris, A.—Surgeon Captain, 1st Essex Vol. Art.

Sparrow, G. G.—Surgeon Major, 2nd Hant's V. A.

No. 1 Company (King's section), Volunteer Medical Staff Corps:

Corporals C. R. Sheward, F. H. Arnett. Lance Corporal A. H. Ahrens. Privates A. Stockton, N. D. Bardswell, G. O. Pierce, M. M. Townsend, J. H. Powell, H. J. Walker, J. R. Milton, S. F. Lynch, C. T. Lewis, H. S. Roch, C. J. Mayhew, C. H. D. Bulteel.

ATHLETIC RECORD.

1. THE CRICKET CLUB.

Captain.—E. E. Head.
Secretary.—K. de R. Bell.

The results of the cricket season compare favorably on paper with previous years, but to anyone who played throughout the season the results must be disappointing. The bowling was perhaps weaker than it has been for some years at King's, but the batting was distinctly superior. The majority of the team were capable of making runs, but it was seldom that more than two or three made runs in the same innings. Cocke, Shortland, and Bird were the most consistent with the bat, while McClintock was perhaps the pick of the bowlers.

List of Matches played.

1894.
May 5th, *v.* Cane Hill Asylum, lost by 50 runs.
„ 16th, *v.* Zouaves, drawn.
„ 19th, *v.* Forest School, won by 27 runs.
„ 26th, *v.* Highgate School, won by 19 runs.
„ 30th, *v.* Chiswick Park, lost by 96 for 4 wickets.
June 1st, *v.* St. Mary's Hospital, lost (Cup Tie) by 7 wickets.
„ 2nd, *v.* Whitgift Grammar School, lost by 30 runs.
„ 9th, *v.* Chigwell, lost by 82 runs.
„ 21st, *v.* M.C.C., lost by 211 runs.
„ 27th, *v.* Cheam, won by 99 runs.
July 6th, *v.* Leavesden Asylum, lost by 3 runs.
„ 11th, *v.* Zouaves, won by 28 runs and 4 wickets.

Total matches played 12. Won 4; lost 7; drawn 1.

Cup Tie.

King's *v.* St. Mary's.

This match was played on Friday, June 1st, at Honor Oak Park, and ended in a win for St. Mary's by seven wickets after an exciting finish. King's won the toss and compiled 104, Mary's replied with 98. King's then made 95 and left St. Mary's 101 to get, and sixty-five minutes to do it in. St. Mary's accomplished this with six minutes to spare, owing to the brilliant hitting of Sworder and Conry. For King's Cocke batted well, and McClintock bowled well, taking six wickets for 31 runs.

King's.

First Innings.		*Second Innings.*	
G. C. Barker, b Sworder	0	l b w, b Wingate	1
J. L. Shortland, c Templeton, b Smellie	21	c Mathews, b Bond	7
K. Bell, c Wingate, b Bond	17	c Murray, b Bond	3
R. S. Cocke, c Mathews, b Sworder	26	c Murray, b Wingate	32
E. E. Head, b Sworder	1	b Wingate	31
W. B. Bell, b Bond	1	b Sworder	6
J. C. Webb, b Sworder	13	b Bond	1
J. McClintock, b Bond	1	b Wingate	1
N. McArthur, c Mathews, b Bond	4	b Bond	0
J. C. Hamilton, c Smellie, b Sworder	6	b Sworder	2
W. L. Hay, not out	0	not out	0
Extras—Byes 9, leg byes 5	14	Extras—Byes 11	11
Total	104	Total	95

St. Mary's.—First innings 98. Second innings (for 3 wickets) 107.

Batting Averages.

	No. of innings.	Total.	Most in an innings.	Times not out.	Average.
R. S. Cocke	15	259	42	1	18·5
J. L. V. Shortland	12	194	50	0	16·16
H. Bird	16	184	39*	2	14·15
J. C. Hamilton	16	158	53	2	11·28
K. Bell	16	168	33	0	10·5

* Not out.

(K. de R. B.)

2. FOOTBALL.

A. RUGBY UNION.

President.—Rev. H. WACE, D.D.
Treasurer.—Prof. HALLIBURTON.
Captain first fifteen.—J. J. C. HAMILTON.
Captain second fifteen.—J. H. ARNETT.
Secretary.—A. H. SAFFORD.

List of Matches.

1893.	October	7th,	*v.* Hampstead, lost by 3 goals 1 try to 0.
	"	14th,	*v.* Dental Hospital, won by 2 goals 8 tries to 0.
	"	18th,	*v.* R. C. Science, won by 1 goal 2 tries to 1 goal.
	"	21st,	*v.* Thornton Heath, won by 1 goal 1 try to 1 try.
	"	28th,	*v.* Eastbourne, lost by 2 goals to 1 try.
			v. Hong-Kong and Shanghai Bk., lost by 1 goal to 0.
			v. The Association Club, won both games.
	November		*v.* Old Blues, drawn.
	"	18th,	*v.* Rosslyn Park, won by 2 tries to 0.
	"	21st,	*v.* Epsom College, lost by 5 goals 2 tries to 1 try.
			v. Oakleigh Park, won by 3 goals 2 tries to 0.
			v. Hammersmith, drawn.
			v. Tooting College, won by 4 goals 4 tries to 0.
	December	16th,	*v.* Hampstead, won by 1 goal to 0.
1894.	January	13th,	*v.* Saracens, lost by 1 goal 1 try to 0.
			v. Oakleigh Park, won by 3 goals to 0.
			v. St. Mary's Hospital, drawn.
	"	26th,	*v.* Middlesex Hospital, lost by 2 goals to 0 (Cup tie).
			v. Saracens, lost by 3 tries to 1 goal.
			v. Royal Naval College, lost by 1 goal 1 try to 1 try.
			v. Tooting College, drawn.

Inter-Hospital Cup Tie.

King's *v.* Middlesex Hospital.

A keen though rather a poor game was played at the Richmond Athletic Ground on Friday, January 26th, in fine weather. King's kicked off against the wind and sun, but Middlesex at once began to work down to the King's 25, and in the first ten minutes Davis, after a scrum close to the goal line, got in. Perry took the kick and converted. King's continued to have rather the worst of matters, their passing whenever they got away being very weak, and before half-time Baker obtained another try for Middlesex. Perry with a splendid kick converted, Middlesex crossed over leading by two goals (10 points) to nothing. In the second half King's played up much better and nearly scored, Hamilton, Hadley, Dillon, Taylor, and Cox showing up. Neither side was able to score, and the match resulted in a win for Middlesex by two goals to nothing. Our forwards were out-matched, and the half-backs did not give the three quarters many openings. The latter did all there was to be done fairly well, but the passing was weak. Ahrens at back put in some very useful runs, but his kicking was poor. The play of our team was, on the whole, decidedly disappointing.

TEAM.—H. A. Ahrens (back); H. A. Good, J. C. Hamilton, and R. M. Cowie (three quarters); H. P. Cox (capt.) and A. H. Safford (half-backs); G. M. McDonald, W. M. B. Sparks, U. W. N. Miles, L. C. Dillon, J. H. Powell, F. A. Hadley, A. J. Taylor, J. L. Shortland, and B. R. Turner (forwards). Referee, Mr. T. D. Bell (University). Touch judges, Messrs. G. S. S. Marshall (Middlesex) and R. S. Olver (King's).

Total matches played = 21. Won 9; lost 8; drawn 4. The second annual supper was held at the Bachelors' Restaurant, December 16th, 1893. (A. H. S.)

B. ASSOCIATION.

Captain.—R. M. COWIE.
Secretary.—E. L. D. DEWDNEY.

Twenty-five matches out of thirty-five arranged were played. Nine were won, eight drawn, and eight lost. The goals scored for the club were 55, and goals scored against the club 51. The goal average does not seem to show up very well, but it must be taken into consideration that no less than 23 of these goals lost were scored in three matches, on two occasions of which we were deprived of the valuable services of our captain, R. M. Cowie (a prominent Carthusian) at full back, who was laid up with a broken collar-bone; and on the other occasion we had a far from representative team. It may not be out of place here to remark that only on one occasion during the season did a thoroughly representative team step into the field, and that was a Hospital Cup tie against London Hospital; the reasons that the club could not get together a representative eleven were that several of the players were on the sick list, and that several members preferred to play regularly for outside clubs.

During the season we met the following well-known clubs:—Crouch End (lost, 0—6); Bexley (drawn, 0—0; in this match we only had ten men, and the team are to be congratulated on their performance); Reading (1—10 lost; here we were without the services of our captain and two or three of our regular team); Chesham (drawn, 2—2, with only ten men); Eltham (won 7—0, and the return by 1—0); Windsor and Eton (lost, 1—3); St. Albans (drawn, 1—1, and the return lost, 0—7); Harrow Athletic (drawn, 1—1); West Kent (lost, 1—3); Hoddesdon (drawn, 1—1); Clapham Rovers (won, 3—0); West Herts (won, 4—0); Old St. Luke's (won, 3—1); in this match the club showed itself to the greatest advantage, and in spite of their opponents' superior training and individual play, the club by their combination outplayed their rivals completely and won.

In the Cup ties the semi-final was reached, but we were put out by Middlesex Hospital. In the first round we were fortunate enough to secure a bye, and in the second round we met the London Hospital. It needed two meetings, however, before a decision could be arrived at: the first was held at Richmond Athletic Ground, and ended in a draw 1—1; the second was played on the Tottenham Ground, and after a hard-fought game, an extra half an hour having to be played, ended in a victory for us by 3 goals to 1. We then met Middlesex Hospital at Leyton, but were without the services of our captain (R. M. Cowie) and our centre forward (A. B. M. Dallas), which made a great difference to our combination, and after a good game we retired beaten by 2 goals to nil.

The following gentlemen in the Hospital team had the honour of being chosen to play for the United Hospitals eleven (which during the season played five matches), and thereby gained their United Hospital Cup:—R. M. Cowie (2 matches); E. L. D. Dewdney (3); K. Bell, W. B. Bell, and E. E. Head (1 each). (E. L. D. D.)

3. ATHLETIC CLUB.

President.—Prof. J. M. THOMSON.
Hon. Secs.—R. M. COWIE; SYDNEY CLARK.

The annual athletic meeting was held on Wednesday, June 13th, 1894, at the London Athletic Club Grounds, Stamford Bridge. Mr. A. Jackson and Mr. W. Turner officiated as starters, and there was an efficient staff of judges; Nat. Perry was timekeeper. In spite of the dull and threatening weather which prevailed, a large number of spectators were present, including many ladies. The events were well contested in almost all cases, large fields being the rule rather than the exception. The President's medal for the "Victor Ludorum" was won by Sydney Clark, who also obtained the prize given by the Ladies' Department. At the termination of the meeting the prizes were distributed by Mr. J. M. Thomson. The finances of the club are in a very satisfactory condition, a deficit of 1893 having been converted into a substantial balance. (Want of space prevents insertion of full details of racing.) (S. C.)

OLD STUDENTS' DINNER.

The above dinner was held at Limmer's Hotel on Monday, October 1st, Professor Watson Cheyne, F.R.S., in the chair.

The following gentlemen acted as stewards :

C. H. Allfrey, Esq., M.D.
A. Boyce Barrow, Esq.
C. W. Bourne, Esq., M.A.
W. A. F. Bateman, Esq., M.D.
Peyton, T. B. Beale, Esq.
Lionel S. Beale, Esq., M.D.
W. Tyrrell Brooks, Esq., M.D.
Jeffrey F. Bell, Esq., M.A.
Sir Hugh Beevor, Bart., M.D.
R. L. Batterbury, Esq., M.D.
Reginald T. H. Bodilly, Esq., M.D.
Philip Birch, Esq., M.D.
L. T. Fraser Bryett, Esq., M.D.
F. F. Burghard, Esq.
Rev. N. Bromley.
Albert Carless, Esq.
Depty. Surg.-Gen. H. Cayley, M.D.
Arthur H. Cheatle, Esq.
G. Lenthal Cheatle, Esq.
Thomas Henry Cheatle, Esq., M.D.
Reginald Clarke, Esq.
T. Furze Clarke, Esq., M.D.
Maitland Coffin, Esq., M.D.
C. Newton Cornish, Esq.
Edgar M. Crookshank, Esq., M.D.
Charles Clay, Esq., M.D.
J. W. Astley Cooper, Esq.
John Cook, Esq., M.D.
John Curnow, Esq., M.D.
Norman Dalton, Esq., M.D.
A. Bloomfield Densham, Esq.
G. H. Roqué Dabbs, Esq., M.D.
John Davidson, Esq., M.D.
J. H. Dempster, Esq.
A. B. Duffin, Esq., M.D.
J. A. Edwards, Esq.
E. H. Ellison, Esq., M.D.
W. J. Essery, Esq.
Robert Fenner, Esq.
David Ferrier, Esq., M.D.
George Flux, Esq.
J. B. Footner, Esq.
Surg.-Capt. H. C. French.
Leedham Fuller, Esq.
Ashley Gibbings, Esq.
C. E. Goddard, Esq.
Edward Gray, Esq., M.D.
James Hodges, Esq.
Gerald Hodgson, Esq.
Wharton P. Hood, Esq., M.D.
Harold Jäger, Esq.
Charles Kelly, Esq., M.D.
Percy G. Lewis, Esq., M.D.
W. Longmore, Esq.
F. Harrison Low, Esq.
T. Lambert Lack, Esq., M.D.
Greville MacDonald, Esq., M.D.
H. A. H. McDougall, Esq.
H. Macnaughton-Jones, Esq., jun
Malcolm M. McHardy, Esq.
Valentine Matthews, Esq., M.D.
Arthur Nicholson, Esq.
A. A. Napper, Esq.
T. Godfrey Parrott, Esq.
G. H. Pedler, Esq.
E. Vernon Pegge, Esq., M.D.
C. W. Philpot, Esq., M.D.
W. J. Palmer, Esq., M.D.

W. S. Playfair, Esq., M.D.
Hugh Playfair, Esq., M.D.
Joseph Pollard, Esq.
R. C. Priestley, Esq.
Urban Pritchard, Esq., M.D.
Sigismund Rentzsch, Esq.
William Rose, Esq.
Sydney Short, Esq., M.D.
F. J. W. Silk, Esq., M.D.
T. Waddilow Smith, Esq.
Wm. Rt. Smith, Esq., M.D.
W. R. Smith, Esq., M.D.
T. F. Hugh Smith, Esq.
H. S. Sandifer, Esq., M.D.
Rothsay C. Stewart, Esq.
B. Lyne Stivens, Esq., M.D.
Edgar Sheppard, Esq., M.D.
G. E. Shuttleworth, Esq., M.D.
Surg.-Capt. C. J. W. Tatham.
St. Clair Thomson, Esq., M.D.
Wm. Turner, Esq.
W. Aldren Turner, Esq., M.D.
Arthur S. Underwood, Esq.
Edward Wood, Esq., M.D.
C. H. Whitcombe, Esq.
G. Smith Ward, Esq., M.D.
Percy L. Webster, Esq.
W. B. Whitmore, Esq.
Rev. Dr. Wace.
J. Burney Yeo, Esq., M.D.

After the toast of "the Queen" had been duly honoured, the Chairman proposed "the Army, Navy, and Reserve Forces," which was responded to by Surgeon Captain Bond. The Chairman now gave the toast of the evening, "King's College Hospital and its Medical School." He said "The toast which I have now to propose is one which will, I have no doubt, be heartily responded to by the large number of old students who are present this evening; it is 'Prosperity to King's College Hospital and its Medical School.' It is just seventeen years ago to-day since I came to King's, a raw and shy northerner with much to learn, and much to unlearn, and my education was at once taken in hand most energetically by the then residents at the hospital, and I was taught many things which were not included in the comprehensive curriculum of the Edinburgh University, some of which, however, have been of the greatest service to me since. At the time when I appeared on the scene there was some not unnatural feeling about the introduction of a foreign element, and I must confess I looked forward with much dread to the coming period of my house-surgeoncy. Fortunately for me I found myself in the society of gentlemen in every sense of the word (and it is, I think, one of the most distinctive characteristics of King's students that they are gentlemen), and in spite of this feeling I was cordially received, and among the best friends that I have are the men who were residents at that time.

"During these seventeen years many changes have occurred in the staff of the Hospital, more especially on the surgical side, in fact, of the members of the surgical staff when I came to King's only one remains, viz. Mr. Rose, now our senior surgeon. Wood, Smith, and Royes Bell have passed away; Lister and Gerald Yeo have resigned, and surgery at King's is now represented by a staff of comparatively young men. It is a very serious responsibility for us who now form the surgical staff to follow in the footsteps of our distinguished predecessors, and to keep up the reputation which the school has now attained; and I can assure you that we all feel this responsibility deeply, and that so far as hard work will help us it will not be spared. True, we cannot hope to approach such a practical master of the surgical art as Fergusson, or such a genius as Lister, but the knowledge that we are the successors of such men must spur us on to do credit to their training and to their school. And this responsibility is all the greater when we recall that, whatever happens with regard to other schools, King's College can never be forgotten, for as long as the art of surgery exists the name of Lister and the colleges with which he was associated will always be remembered. I cannot but think that it is a great misfortune to our school that we have lost the services of the man of the century in the surgical world while he is still in full vigour, and I could have wished that some means might have been found by which his presence among us, at least occasionally, as an active worker might have been secured. Apart from the advantage to us of association with his name, it is of great importance to place before the student a high ideal, and one of the greatest influences for good for a youth is actual contact with a great, good, and enthusiastic man.

"In proposing the toast of prosperity to the school the critical stranger may ask whether this is not a mere formality, whether we really deserve prosperity, whether we are keeping pace with the times, and whether the education we offer is as good as the student can get elsewhere. I have no hesitation in asserting that this is the case, and that the education we give is every bit as good, and in some respects perhaps better than can be got in other places. During the last seventeen years great changes have taken place in the medical sciences, and I think we may claim to have kept well abreast of these changes. The revolution in surgery which was going on when Lister came here, and which resulted from his work, has continued to such an extent that were some of the older giants in surgery to rise from their graves, they would be bewildered, and I think even horrified at much that is now done with perfect safety and as a matter of course; with these developments we have naturally, as the result of the presence of the master among us, fully kept pace. During this period also we have witnessed the enormous development of the new science of bacteriology. Seventeen years ago the so-called practical surgeon laughed at these little organisms, men doubted their existence, or looked on them as curiosities and of no practical importance, and regarded those who devoted time to their study as unpractical men with a decided mental twist; and yet we have now, as the result of this study, a new science which almost overshadows all the other medical sciences, the knowledge of which is essential to the practitioner, and the study of which promises therapeutic results in the case of the infective diseases of surpassing importance. In the development and propagation of this science King's College has taken its full share, and I need only refer to the fact that here was established the first Chair of Bacteriology in this kingdom, and for some time it remained the only one, the other schools only slowly and imperfectly following suit.

"The increasing importance of a sound scientific training and of original research has also been recognised, and has led to the equipment of various laboratories, such as a public health laboratory, a surgical one, and one for the study of neurology; while the teaching facilities have also been extended by the institution of new Chairs, such as those of Neurology and of Clinical Therapeutics, by establishing tutorial clinical teaching, new departments at the hospital,—for example, the throat department, and so on. All this is, no doubt, familiar to most of you, and I think I have said enough to show that we have not been asleep, but have been keeping up with the times in every respect.

"But the critic may ask, Granting what you say, that you have been keeping pace with the advance of medical science and teaching, how it is that you do not have a larger number of students? for it must be admitted that we have not so many students as I think we deserve. That is not an easy question, and probably the question is a complex one. Fashion has much to do in such matters; the larger schools have a great and probably increasing advantage in that they have so many practitioners scattered over the country acting as feeders; the erroneous but wide-spread idea that certain religious disabilities exist, no doubt deters many, and so on. I shall not enter into these matters, but shall, as my last point, refer to one great cause why the school remains small, and that is our modesty; we are too modest and retiring. However capable a man may be, unless he takes some means of informing others of his excellence he is very apt to be overlooked, and the same holds good of a medical school. Now-a-days people are too busy to search out a good thing unless it is constantly and vigorously brought to their notice, and they are very apt to accept a place at or nearly at its own estimate. And I fear we must admit that as compared with other schools, who scatter their advertisements far and wide, and on every possible occasion, we too often are only noticeable for our absence.

"In one respect we are, as you are all aware, about to make an effort to remedy this in so far as old students at least are concerned, and to keep King's men in touch with their alma mater, and with what is being done there.. I refer to the proposed publication of annual hospital reports. By such a publication we hope to achieve various results. In the first place the list of subscribers with their addresses will be published, so that men may know what has become of their fellow-students (and we hope to number in that list all who take any interest in their old school); an attempt will be made to give some idea from year to year of what they are doing, notices of papers they publish, and so on; further, we shall furnish a report of what is going on at the Hospital and in the various departments of the school, so that men may judge for themselves how far the school is doing its duty, and earning a title as a place which can be confidently recommended for medical education; and lastly, in such reports we hope to illustrate by cases the advances going in medical practice, and thus be of some assistance, especially to those at a distance from hospitals and hospital work. Naturally such an undertaking is a difficult one to start, and there may be delay in the issue of the first volume, and no doubt many imperfections in it; but once it is started, it will be comparatively easy to carry it on, and to introduce into it such improvements as experience may suggest.

"In proposing this toast I have the pleasure of coupling with it the name of our esteemed Principal, the Rev. Dr. Wace. King's owes much to Dr. Wace, and there is no one who works so hard in the interests of the school and serves it with such single-mindedness. Not only has the College, but perhaps to an even greater extent the Hospital, benefited by his enthusiasm and energy. He assumed the chairmanship of the Hospital committee at a time when we were in a very precarious condition, and it is to him more especially that we owe the fact that we still exist, and not only exist, but are in a better position, both as regards finances and as regards power of doing good work, than we have been for many years.

"I think I have said enough to show that in drinking this toast you are not merely carrying out a graceful formality, but are wishing prosperity to a real, living, progressive institution, and one deserving of your active and enthusiastic support. I ask you, therefore, to drink with enthusiasm the toast of Prosperity to King's College Hospital and its Medical School, coupled with the name of the Rev. Dr. Wace."

Dr. Wace having replied, Country Friends, Town Friends, and the Chairman were successively honoured.

The success of the evening was greatly enhanced by the admirable singing of Mr. Percy L. Webster and the musical sketches of Mr. A. Schartau.

G. E. MOORE, M.D.,
E. H. HOWLETT, F.R.C.S.,
NESTOR TIRARD, M.D.,
JOHN PHILLIPS, M.D.,
} *Hon Secs.*

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